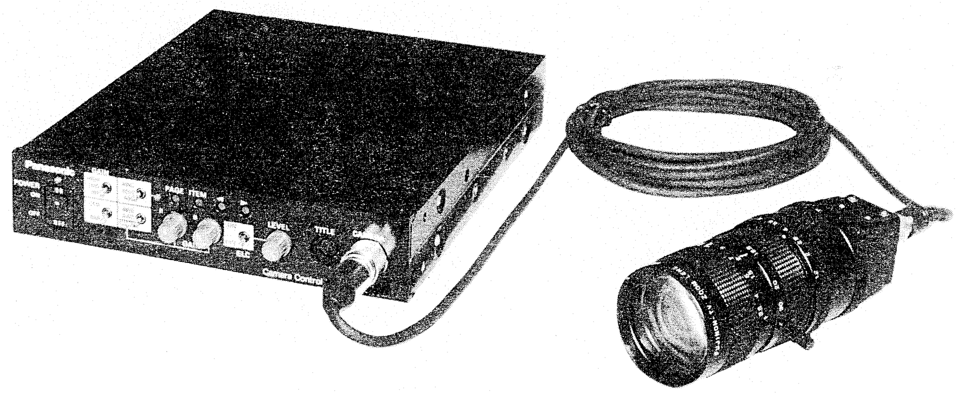
ORDER NO. AVS9401814C8

Service Manual

Industrial Colour Camera

GP-US502E



Lens : Purchased locally
Cable : Option

SPECIFICATIONS

Pick-up System:	Micro prism system (F1.6)
Image Sensor:	Three 1/2" interline transfer (IT) supper high sensitivity CCDs
Pixels:	752 (Horizontal) x 582 (Vertical)
Scanning Standard:	625 lines, 50 fields, 25 frames
Synchronizing System:	Internal or External (Gen-Lock), automatically switchable Internal: PAL standard External (Gen-Lock) Input: VBS/VS/HD/VD is selectable SC Phase for Gen-Lock (VBS): Free adjustable over 360° H Phase for Gen-Lock (VS): Adjustable
Video Outputs:	Video Output: BNC Connector x 2 1.0Vp-p PAL composite/75ohms Y/C (S-VIDEO) Output: S-VIDEO Connector x 1 0.7 Vp-p Luminance level (Y)/75ohms (S-VIDEO connector) 0.3 Vp-p Burst Level (C)/75ohms (S-VIDEO connector) RGB/SYNC Output: D-SUB 9-pin Connector x 1 R/G/B: 0.7Vp-p each/75ohms SYNC: 4Vp-p/75ohms or 0.3Vp-p/75ohms selectable VIDEO: PAL composite/75ohms
Required Illumination:	2000 Lux at F8.0, 3200° K
Minimum Illumination:	9 Lux at F2.8 with +18dB gain, 30% level
Signal-to-Noise Ratio:	56dB (Typical, Luminance) without aperture and gamma
Horizontal Resolution:	700 lines at center (Y signal)
White Balance:	ATW (Automatic Tracing White Balance Control), AWC (Automatic White Balance Control) and Manual
Black Balance:	ABC (Automatic Black Balance) and Manual

Panasonic

Colour Bar:	Built-in full colour bar (75% White Level)
Electronic Shutter:	AUTO: Adjustable between 1/50 - 1/10,000sec STEP: Selectable 1/50 (OFF),1/120, 1/250, 1/500, 1/1,000, 1/2000, 1/4000 and 1/10000s SYNCHRO SCAN: Selectable from 1/625 to 305/625 line
Gain Selection:	AGC and Gain Up (Selectable)
Switches:	Power On/Off (POWER), Camera/Colour Bar Selection (CAM/BAR), Gain Up Selection (OFF/LOW/HIGH (0/+9/+18dB)), Auto White/Auto Black Balance Set (AWC/HOLD/ABC), White Balance Selection (ATW/AWC/MANU), ELC (Electronic Light Control) On/Off, PAGE, ITEM, < (LEFT) and > (RIGHT)
Controls:	R Gain, B Gain and ELC LEVEL
Lens Mount:	Special C Mount
Power Source:	12V DC
Power Consumption:	8.4W
Ambient Operating Temperature:	0°C - +45°C (32°F - 113°F)
Ambient Operating Humidity:	30% - 90%
Dimensions	
Camera Head:	34 (W) x 44 (H) x 51.5 (D) mm
(Excluding Mounting Adaptor)	(1-5/16" (W) x 1-11/16" (H) x 2" (D))
CCU:	206.5 (W) x 44 (H) x 250 (D) mm
(Excluding Rubber Foot and Connector)	(8-1/8" (W) x 1-11/16" (H) x 9-1/2" (D))
Weights	
Camera Head:	110g (0.24 lbs)
CCU:	1.7Kg (3.74 lbs)

Dimensions and Weights indicated are approximate
Specifications are subject to change without notice.

STANDARD ACCESSORIES

XLR 4 pin Connector for Power Supply..........................1 pc
Body Cap...1 pc

OPTIONAL ACCESSORIES

Camera Cable: GP-CA63
Character Generators: WJ-KB15, WJ-KB50

⚡ **CAUTION** ⚠

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:
TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE.
REFER SERVICEING TO QUALIFIED SERVICE PERSONNEL.

⚡ This symbol warns the user that uninsuland voltage within the unit may have suificient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any inside part of this unit.

⚠ This symbol alerts the user that impotant literature concerning the operation and maintenance of this has been included.
Therefore, it should be read carefully in order to avoid any problems.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are indicated by the " ⚠ " mark on the schematic diagram and the replacement parts list It is essential that these critical parts should be repleced with manufacture's specilied parts to prevent shock, fire, or other hazards
Do not modify the original design without permission of manufacture

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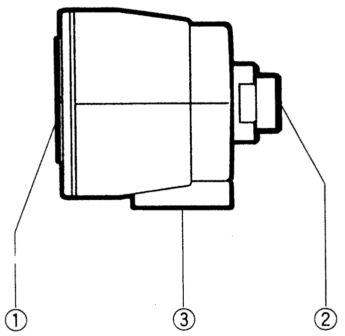
MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS

Camera Head

1. **Lens Mount**
   Used this to attach the special C-mount lens.

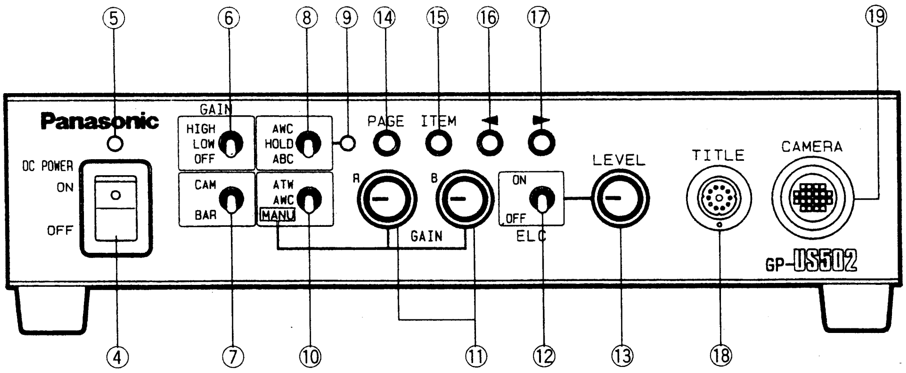
2. **Camera Cable Connector**
   This 20-pin connector is used to connect the optional camera cable GP-CA63 to the camera control unit.

3. **Camera Mounting Screw Hole**
   This threaded hole (1/4" - 20) is located on the bottom of the camera head and is used to mount the camera onto a mounting bracket or tripod.



Camera Control Unit

[Front Panel]


⑤
⑥
⑧
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⑭
⑮
⑯
⑰
⑲
Panasonic
DC POWER
ON
OFF
GAIN
HIGH
LOW
OFF
AWC
HOLD
ABC
CAM
BAR
ATW
AWC
MANU
PAGE
ITEM
◄
►
R
B
GAIN
ON
OFF
ELC
LEVEL
TITLE
CAMERA
GP-US502
④
⑦
⑩
⑪
⑫
⑬
⑱

4. **Power ON/OFF Switch (DC POWER ON/OFF)**
   This switch turns ON and OFF the power of this unit and power supply for camera head.

5. **Power Indicator (POWER)**
   This indicator lights up red when the power switch (4) is turned ON.

6. **Automatic/Manual Gain Selection Switch (GAIN OFF/LOW/HIGH)**
   This switch is used to select the gain of video amplifier as follows.
   The mode can be selected in the SETUP MENU.

   Note : When set the gamma mode in the SCENE FILE MENU to OFF position, the AGC mode is not available.

MODE	POSITION OF SW	GAIN
AGC	HIGH	Maximum +18dB
	LOW	Maximum + 9dB
	OFF	0dB
MANU	HIGH	+18dB (Fixed)
	LOW	+9dB (Fixed)
	OFF	0dB

7. **Camera/Colour Bar Selection Switch (CAM/BAR)**
   This switch is used to select either the video signal or the colour bar signal which is output from the Video Output Connector (VIDEO), YC (S-VIDEO) Connector or RGB (D-SUB, 9-pin) Output Connector.
   CAM : The video signal produced by the camera is output.
   BAR : The full colour bar (75% white level) signal is output.

Set the switch to BAR position when making video monitor adjustments and recording the colour bar signal.

8. **Auto White Balance/Auto Black Balance Set Switch (AWC/HOLD/ABC)**
This switch sets the white balance and black balance automatically as follows.
AWC : This position is used for setting the white balance when the White Balance Selection Switch (ATW/AWC/MANU)(10) is set to the AWC position. Aim the camera at white chart and press this switch to upwards to set the white balance.
The Auto Warning Indicator starts blinking to indicate that the white balance is being set.
When the white balance setting is completed, the blinking stops.
When the Auto Warning Indicator (9) lights continuously, check the position of White Balance Selection Switch (ATW/AWC/MANU) (10) is set to AWC position, and carry out the auto white balance setting procedure.
HOLD : In this position the white and black balances set at the AWC or ABC position can be fixed in a memory.
ABC : This position is used for setting the black balance when the Black Balance Control (BLACK BAL) in the SETUP MENU is set to ABC position. Close the lens iris or cap on the lens and press this switch to downwards to set the black balance. The Auto Warning Indicator starts blinking to indicate that the black balance is being set.
When the black balance setting is completed the blinking stops.
When the Auto Warning Indicator (9) lights continuously, check the mode of Black Balance in the SETUP menu is set to ABC mode, and carry out the auto black balance setting procedure.

9. **Auto Warning Indicator**
This indicator blinks while the white balance or black balance is being automatically set. This indicator lights continuously when the white balance or black balance is set improperly. In this case, carry out the auto white balance or black balance setting procedure.

10. **White Balance Selection Switch (ATW/AWC/MANU)**
This switch selects the white balance mode as follows.
ATW : In this Auto-Tracing White Balance(ATW) position, the colour temperature of the illuminant is continuously monitored and the white balance of the camera is automatically set.
AWC : This switch is used to set the Auto White Balance (AWC) together with Auto White Balance/ Auto Black Balance Set Switch (AWC/HOLD/ ABC) (8).
MANU : The white balance can be adjusted manually by the Red Gain (R GAIN) and Blue Gain Controls (B GAIN) (11).
Notes :
1. The mode of White Balance can also be checked in the SETUP MENU.
2. When set the gamma mode in the SCENE FILE MENU to OFF position, the ATW mode is not available.

11. **Red and Blue Gain Controls (R GAIN/B GAIN)**
These controls are used to manually adjust the white balance.
These controls only work when the White Balance Selection Switch (ATW/AWC/MANU) (10) is set to MANU position.
Turn the controls clockwise to increase the red and blue signal levels, and counterclockwise to decrease these levels.

12. **Electronic Light Control ON/OFF Switch (ELC ON/OFF)**
This switch selects the Electronic Light Control as follows.
ON : In this position the Electronic Light Control (ELC) mode is selected and the Electronic Shutter Speed (SHUTTER) mode in the SETUP MENU is interrupted.
OFF : In this position the Shutter Speed Mode(SHUTTER) in the SETUP MENU is selected and Electronic Light Control (ELC) mode is interrupted.
Notes :
1. The function of this switch can be confirmed in the SETUP MENU.
2. When select the gamma off mode in the SCENE FILE menu, ELC and AGC modes are interrupted.

13. **Electronic Shutter Speed Control (LEVEL)**
This control is used to set the target value of Electronic Shutter Speed between 1/50 and 1/10,000 sec together with ELC ON/OFF Switch (12).
Notes :
The iris operation can not be controlled by this Electronic Shutter Speed Control.

14. **Page Button (PAGE)**
This button is used to display the SETUP MENU by pressing it for more than 2 seconds and to change the mode in the SETUP MENU.

15. **Item Button (ITEM)**
This button is used to move the cursor(Blinking position) in the down direction in the SETUP MENU.

16. **Left Button (<)**
This button is used to move the cursor(Blinking position) in the left direction in the SETUP MENU.

17. Right Button (>)

This button is used to move the cursor(Blinking position) in the right direction in the SETUP MENU.

18. Title Input Connector (TITLE)

This connector is used to connect the Optional Character Generators WJ-KB15 or WJ-KB50.

Note :

The Black & White characters of the generator are mixed with the video signal and are obtained at VIDEO OUT, S-VIDEO (Y/C) OUT and RGB/SYNC OUT connectors.

No colourization of the character is available.

19. Camera Cable Connector (CAMERA)

This 20-pin connector is used for connection with the camera head via the optional camera cable GP-CA63. Fasten the camera cable to this connector firmly.

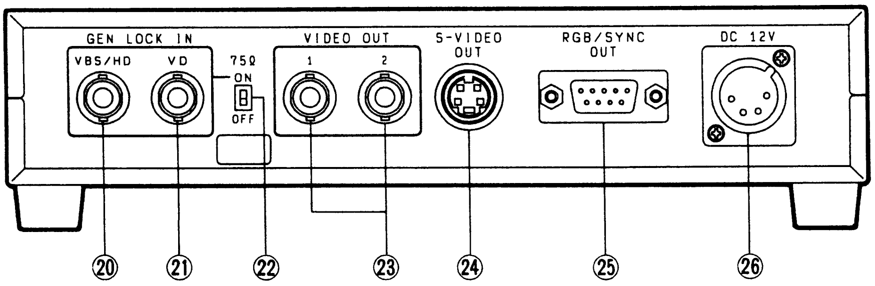
If not, noise may be appeared.

Camera Head Side	Pin No.	Camera Control Unit Side
-9V Input	1	-9V Output
+5V Input	2	+5V Output
+15V Input	3	+15V Output
G Signal Output	4	G Signal Input
V2 Input	5	V2 Output
R Signal Output	6	R Signal Input
V4 Input	7	V4 Output
+25V Input	8	+25V Output
V1 Input	9	V1 Output
V3 Input	10	V3 Output
RGB Ground(GND)	11	RGB Ground(GND)
SHT(R) Input	12	SHT(R) Output
N. C.	13	N. C.
B Signal Output	14	B Signal Input
Ground(GND)	15	Ground(GND)
N. C.	16	N. C.
SHT(G) Input	17	SHT(G) Output
SHT(B) Input	18	SHT(B) Output
H2 Input	19	H2 Output
RG Input	20	RG Output

Caution :

Connecting or disconnecting the camera cable must be done after turning OFF the Power of Camera Control Unit.

[Rear Panel]



20. Gen-lock Signal Input Connector (BNC) (VBS/HD)

The colour video signal of the camera is automatically synchronized to the gen-lock signal (Composite Signal, Black Burst Signal or Video Sync) when either signal is supplied to this connector.

The gen-lock signal is used for system reference.

Caution :

If the gen-lock signal is jittery (as in the case of a VTR playback picture), the camera can not be synchronized properly.

(External HD and VD Mode)

The horizontal and vertical pulse of the colour video signal is synchronized to the external HD fed to this connector and external VD fed to the VD Input Connector (21).

21. Gen-Lock Signal Input Connector (BNC) (VD)

Supply the external vertical drive (VD) pulse to this connector.

22. Gen-Lock Video 75 ohms Termination On/Off Switch (75 ohms ON/OFF)

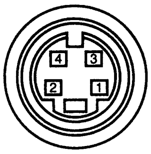
When looping through the gen-lock video signal with BNC "T" Adaptor, set this switch to OFF position. When not looping through, set this switch to ON position.

23. Video Output Connector (BNC) (VIDEO OUT 1,2)

A 1.0Vp-p/75 ohms composite video signal is provided at this connector.

24. S-Video Output Connector (S-VIDEO OUT)

The luminance(Y) and chrominance(C) signals for S-VHS VTR or monitor are provided at this connector.

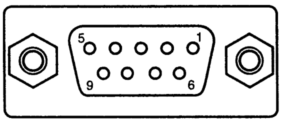


S-VIDEO OUT (Mini-DIN,4-pin)

Pin No.	Description
1	Y Ground
2	C Ground
3	Y Signal Output(0.7 Vp-p(Y level)/75 ohms)
4	C Signal Output(0.3 Vp-p(Burst Level)/75 ohms)

25. RGB/SYNC Output Connector (D-SUB,9-pin) (RGB/SYNC OUT)

The red, green, blue, sync and composite video signals are provided at this connector.



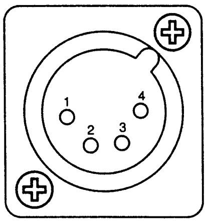
RGB/SYNC OUT (D-SUB,9-pin)

Pin No.	Description
1	Ground(GND)
2	Ground(GND)
3	Red(R) Output(0.7Vp-p/75 ohms)
4	Green(G) Output(0.7Vp-p/75 ohms)
5	Blue(B) Output(0.7Vp-p/75 ohms)
6	Composite Video Output(1.0Vp-p/75 ohms)
7	Sync(SYNC)Output(4.0Vp-p or 0.3Vp-p/75 ohms)
8	Ground(GND)
9	Ground(GND)

26. 12V DC Input Connector(XLR,4-pin)(DC 12V)

This connector accepts an external DC power source supplying nominal power of 12V DC, 0.7A.

Pin No	Description
1	Ground(GND)
2	Not Used
3	Not Used
4	+12V DC IN



DC 12V
(XLR,4-pin)

CAUTION :

CONNECT THIS TO A 12V DC CLASS 1 POWER SUPPLY UNIT ONLY.

CIRCUIT DESCRIPTION

Circuit Description

1. Sensor Board

The H2 obtained at the pin 20 of the Camera Cable connector CN1 on the Front Panel of the Camera Control Unit is supplied to the pin 5 of the IC5.

Referring to Fig. 1-1, this circuit inverted H2 Pulse and generates H1, H2 and LH1 Pulses.

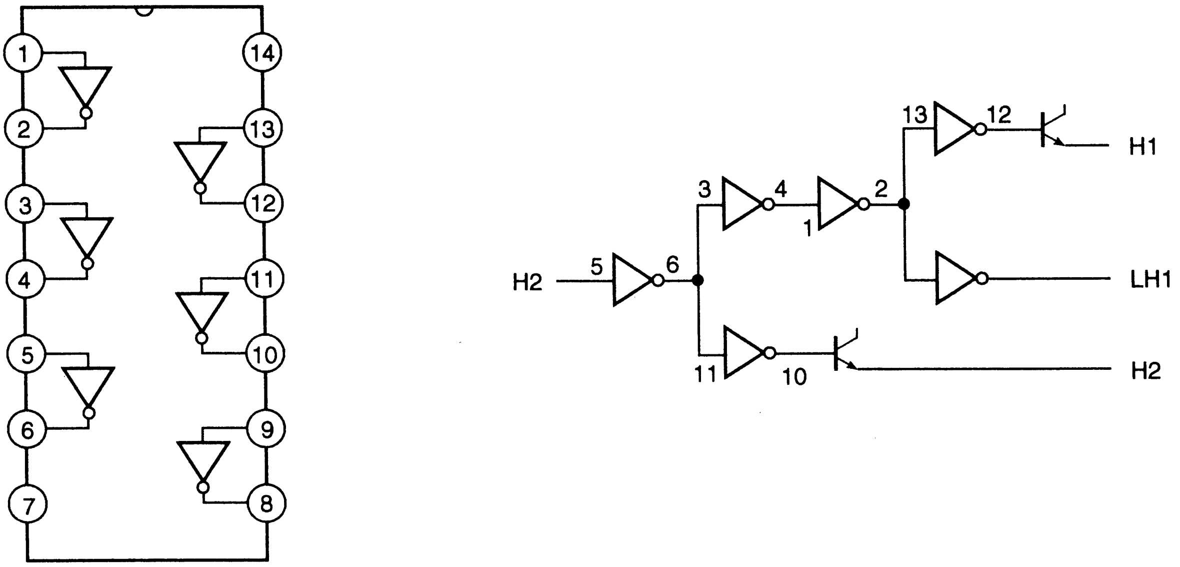


Fig. 1-1

2. Drive Circuit Section

The Fig. 2-1 shows the CCD Drive Pulse Generator Circuit. This circuit receives the vertical drive (VD) pulse and the wide horizontal drive (WHD) pulse from the Sync Circuit Section and the clock pulse from the timing generator IC6 and generates CCD drive pulses and the other pulses.

The VCO circuit consists of D15, D16, C5, C7, C9, L15 (VCO) with oscillator inside IC1 generates 28MHz signal.

In IC1 phase of the clock pulse routed to the pin 64 with the HD pulse to the pin 17 are compared. This compared pulse obtained at the pin 11 of IC1 is supplied through the L.P.F. circuit consists of Q1, R76, R78, R83, C17 and C56 that convert into the VCO control bias to the VCO circuit forming the PLL circuit to stabilize the oscillation frequency.

The H. transfer pulse 1 (H1) obtained at the pin 26 of C6 is supplied to the Sensor Board.

The V. transfer pulses 1 (V1), 2 (V2), 3 (V3) and 4 (V4) are generated in IC6 and obtained at the pins 30, 31, 33 and 35 of IC6.

These pulses are supplied to the V. Driver IC2 where their levels timing for producing the V. transfer pulses (ØV1 – ØV4).

The field shift pulses from the pins 32 and 34 of IC6 are supplied to the pins 9 and 12 of IC2 and mixed with the V1 and V3 pulses.

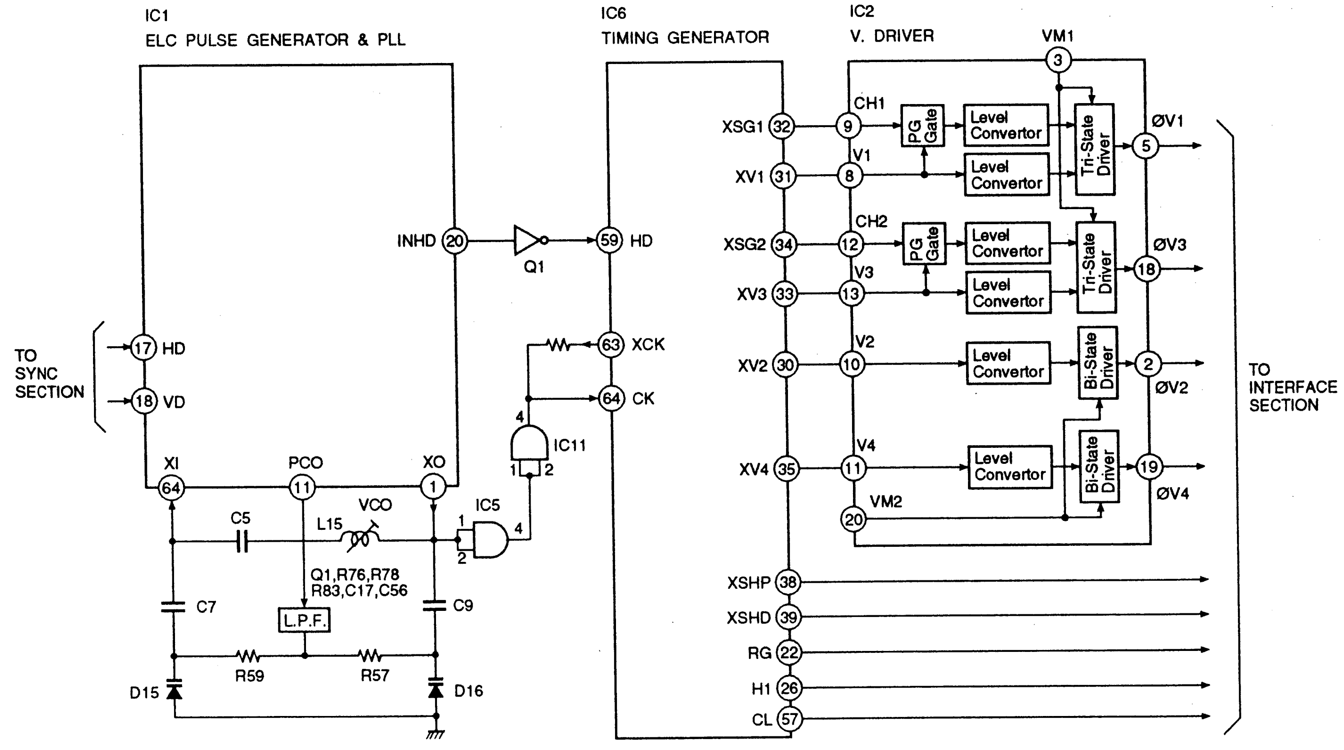

IC1
ELC PULSE GENERATOR & PLL
IC6
TIMING GENERATOR
IC2
V. DRIVER
VM1
INHD
HD
Q1
TO SYNC SECTION
HD
VD
XCK
CK
IC11
XI
PCO
XO
VCO
C5
L15
IC5
Q1,R76,R78
R83,C17,C56
L.P.F.
C7
C9
R59
R57
D15
D16
XSG1
XV1
XSG2
XV3
XV2
XV4
XSHP
XSHD
RG
H1
CL
CH1
V1
CH2
V3
V2
V4
VM2
PG Gate
Level Convertor
Tri-State Driver
Bi-State Driver
ØV1
ØV3
ØV2
ØV4
TO INTERFACE SECTION

Fig. 2-1

3. Process Circuit Section

The Fig. 3-1 shows the Process Circuit.

The CDS output signals R, G and B are obtained at the pins 1, 4 and 7 of CN1 are supplied to the pins 68, 4 and 51 of IC103 through the buffers Q103, Q104 and Q102.

The R, G and B signals are supplied to the A/D Converter IC303, IC304 and IC305 through the W/B, AGC and γ correction in IC103.

The R, G, and B signals are converted to 8-bit parallel digital signal by IC303, IC304 and IC305 then supplied to the Y/C Digital Signal Processor IC306.

The 8-bit paralleled digital signal (Y and C) obtained IC6 are supplied to the D/A Converter IC308.

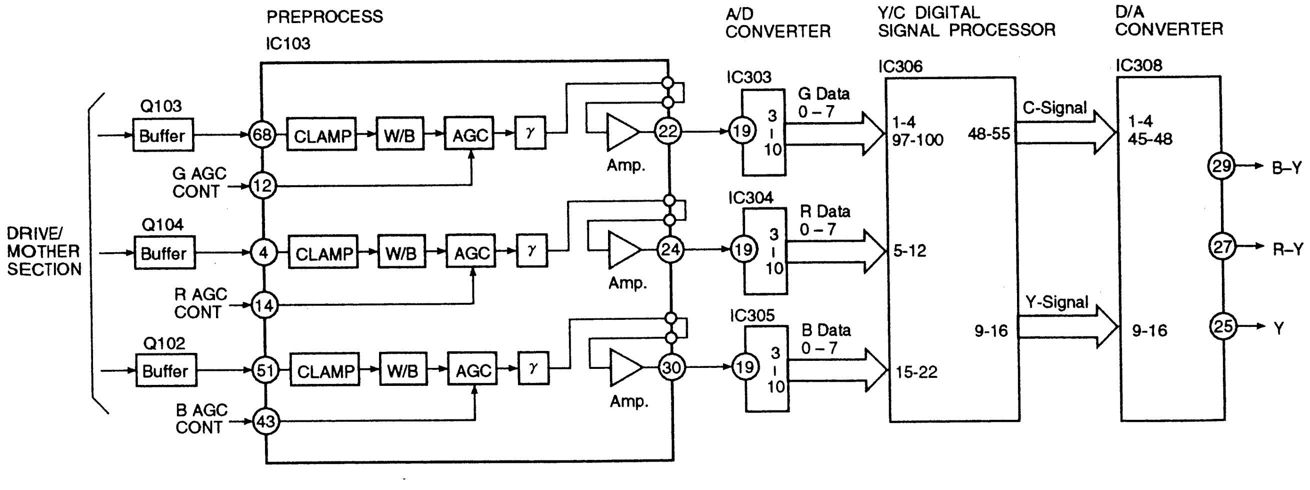

PREPROCESS
IC103
A/D CONVERTER
Y/C DIGITAL SIGNAL PROCESSOR
D/A CONVERTER
DRIVE/ MOTHER SECTION
Q103
Buffer
Q104
Q102
CLAMP
W/B
AGC
γ
Amp.
G AGC CONT
R AGC CONT
B AGC CONT
IC303
IC304
IC305
G Data 0 – 7
R Data 0 – 7
B Data 0 – 7
IC306
1-4 97-100
5-12
15-22
48-55
9-16
C-Signal
Y-Signal
IC308
1-4 45-48
9-16
B–Y
R–Y
Y

Fig. 3-1

4. Encoder Circuit Section

The Fig. 4-1 shows the Modulator/Encoder Circuit.

This circuit generates the chrominance signal from the R–Y and B–Y color difference signals.

The R–Y signal converted into an analog signal by the D/A Converter IC308 on the Process Circuit Section is fed to the Encoder Circuit in IC6.

The R–Y signal is balance modulated at the modulator circuit in IC6 by the Subcarrier signal for producing the R signal, similarly, the B–Y signal converted into an analog signal by the D/A Converter IC308 on the Process Circuit Section obtained at the pin 20 of IC6 is fed to the Encoder circuit in IC6.

The B–Y signal is balance modulated at the modulator circuit in IC6 by the Subcarrier signal for producing the B signal.

The R and B signal are mixed to generate the chrominance (C) signal , and the C signal obtained at the pin 47 of IC6 is fed to 4.43 MHz band pass filter (B.P.F.) CF1, where the chrominance component is only passed through.

The C signal mixed with the luminance signal (Y) in IC6.

The mixed signal obtained at the pin 28 of IC6 is fed to the buffer Q40.

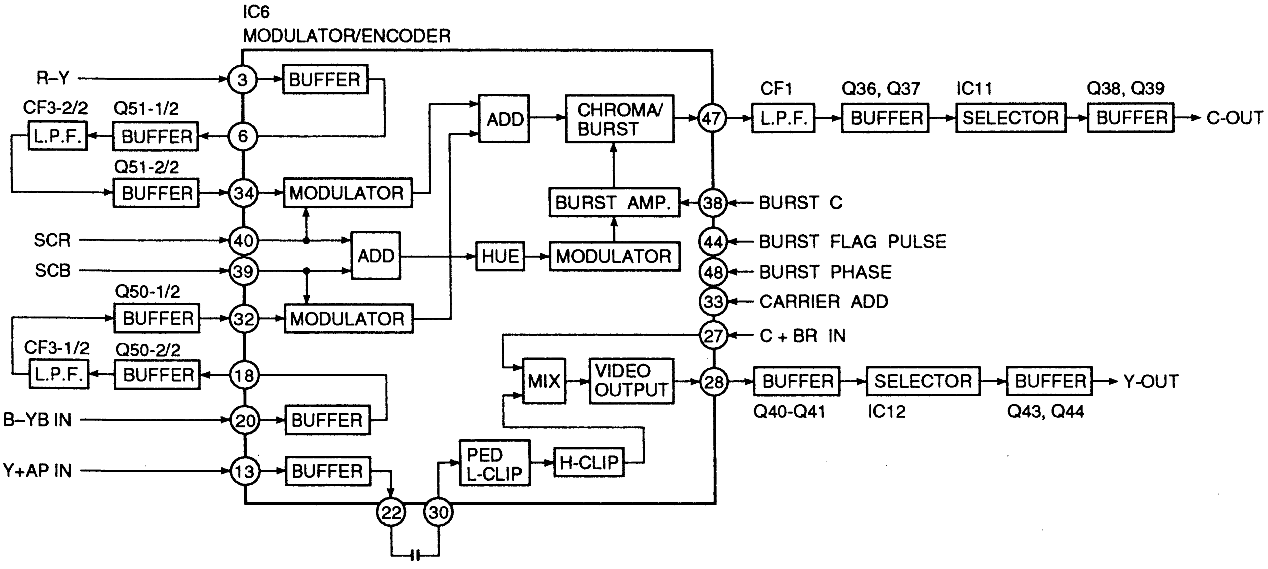

IC6
MODULATOR/ENCODER
R–Y
CF3-2/2
Q51-1/2
L.P.F.
BUFFER
Q51-2/2
BUFFER
SCR
SCB
Q50-1/2
BUFFER
CF3-1/2
Q50-2/2
L.P.F.
BUFFER
B–YB IN
Y+AP IN
3
6
34
40
39
32
18
20
13
22
30
BUFFER
MODULATOR
ADD
MODULATOR
BUFFER
BUFFER
ADD
CHROMA/ BURST
BURST AMP.
HUE
MODULATOR
MIX
VIDEO OUTPUT
PED L-CLIP
H-CLIP
47
38
44
48
33
27
28
BURST C
BURST FLAG PULSE
BURST PHASE
CARRIER ADD
C + BR IN
CF1
L.P.F.
Q36, Q37
BUFFER
IC11
SELECTOR
Q38, Q39
BUFFER
C-OUT
BUFFER
Q40-Q41
SELECTOR
IC12
BUFFER
Q43, Q44
Y-OUT

Fig. 4-1

5. Sync Circuit Section

The Fig. 5-1 shows the Sync Generator Circuit.

This circuit generates the pulses necessary to produce the video signal.

The Sync Generator IC1 has detect of the Sync signal (multiplexed Vertical Drive (VD), Line-lock (L.L.), Color Composite Video or Black burst signal and internal Sync (INT)) and output of the phase comparator inside IC1 is selected by the analog switch inside IC1 that apply to input signal.

The priority of the Sync mode is as shown in the Table 5-1.

	Sync Mode
1	VD
2	L.L.
3	VBS
4	VS
5	INT

Table 5-1

The 17.72 MHz oscillator is composed of X1, D1, D2, R28, R29, C9 and C10, it's oscillation frequency controlled by the oscillator control DC obtained at the pin 1 of IC1 is fed to 17.72 MHz oscillator.

The oscillation output is supplied to the pin 72 of IC1 for producing 4.43 MHz Subcarrier signal.

The Subcarrier signals (SC B) and (SC R) are obtained at the pins 74 and 75 of IC1 are fed to the pins 39 (SC B) and 40 (SC R) of the Modulator/Encoder IC6.
The Sync mode obtained at the pins 38, 39 and 40 of IC1 is fed to the Key Scan circuit of the Microprocessor part of the Process Circuit Section.
The Table 5-2 shows the Sync mode.

	Pin 38	Pin 39	Pin 40
Sync Mode	M1	M2	M3
VD	H	H	L
L.L.	H	L	H
VBS	H	L	L
VS	L	L	H
INT	L	L	L

Table 5-2

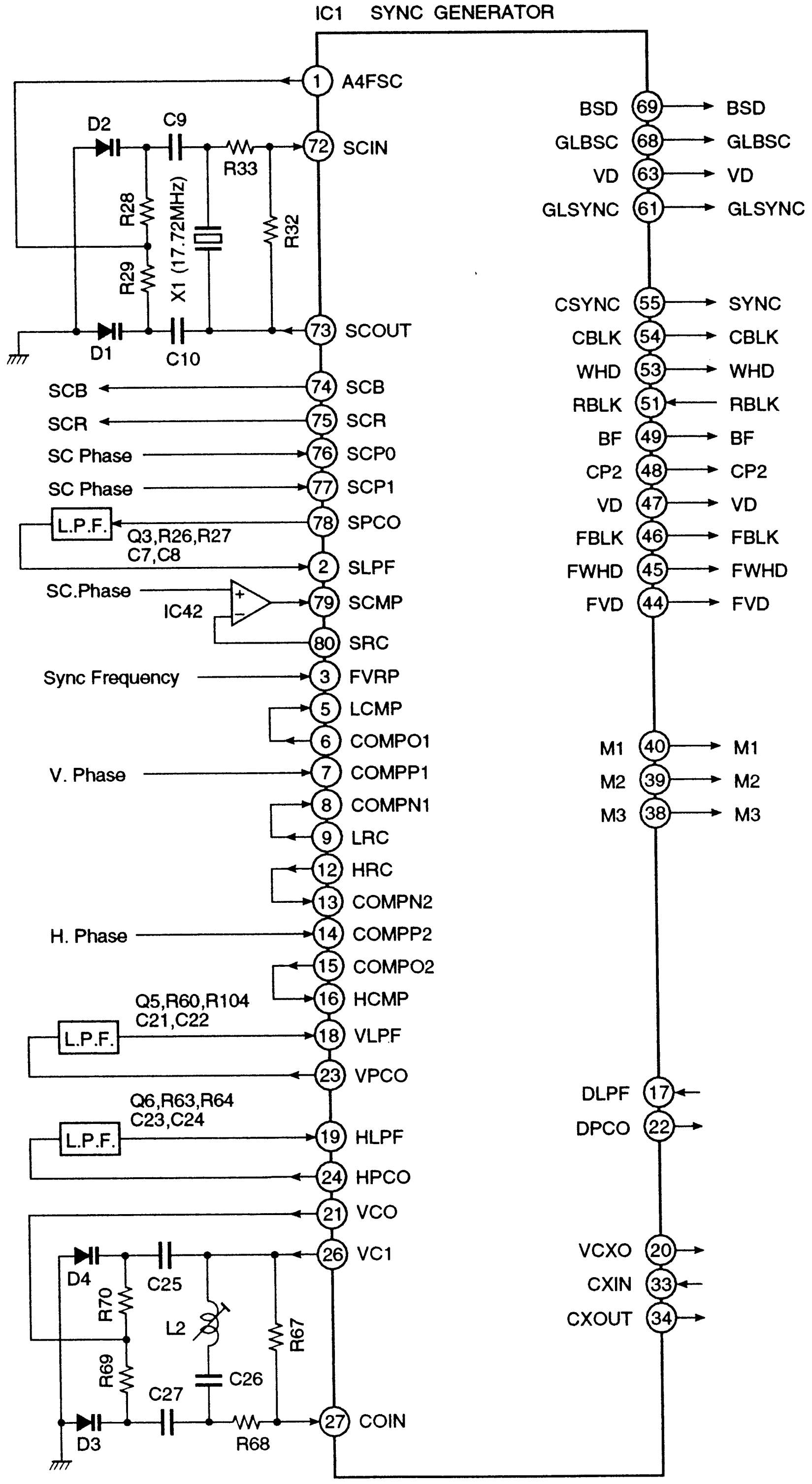
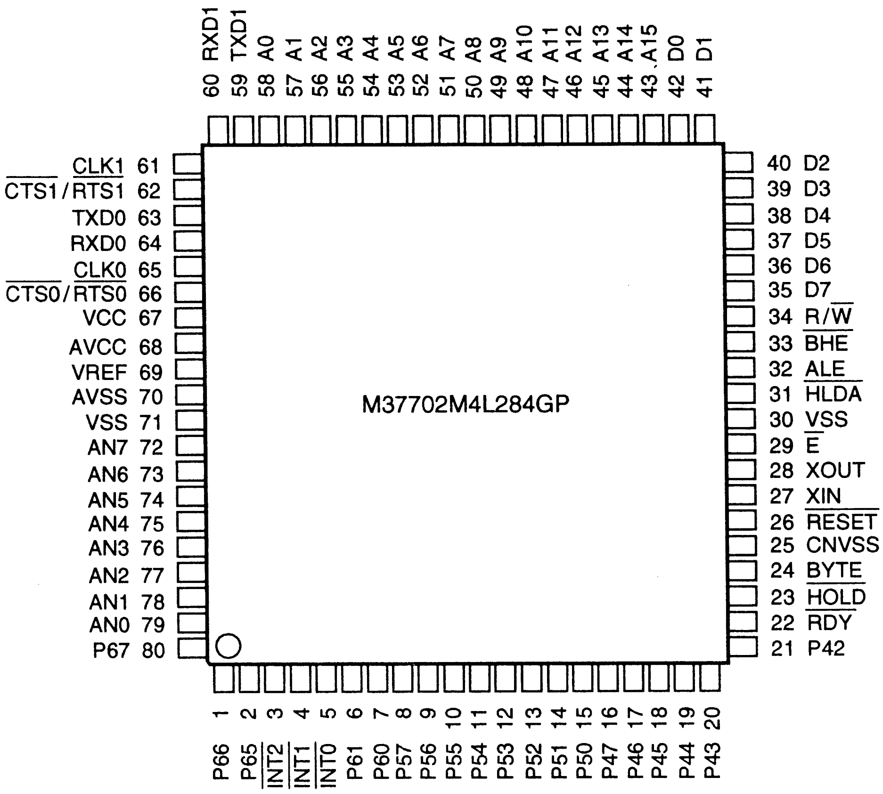

IC1 SYNC GENERATOR
1 A4FSC
D2
C9
R33
72 SCIN
R28
R29
X1 (17.72MHz)
R32
D1
C10
73 SCOUT
SCB
74 SCB
SCR
75 SCR
SC Phase
76 SCP0
SC Phase
77 SCP1
L.P.F.
78 SPCO
Q3,R26,R27
C7,C8
2 SLPF
SC.Phase
IC42
79 SCMP
80 SRC
Sync Frequency
3 FVRP
5 LCMP
6 COMPO1
V. Phase
7 COMPP1
8 COMPN1
9 LRC
12 HRC
13 COMPN2
H. Phase
14 COMPP2
15 COMPO2
16 HCMP
Q5,R60,R104
C21,C22
L.P.F.
18 VLPF
23 VPCO
Q6,R63,R64
C23,C24
L.P.F.
19 HLPF
24 HPCO
21 VCO
D4
C25
26 VC1
R70
L2
R67
R69
C26
C27
D3
R68
27 COIN
BSD 69 BSD
GLBSC 68 GLBSC
VD 63 VD
GLSYNC 61 GLSYNC
CSYNC 55 SYNC
CBLK 54 CBLK
WHD 53 WHD
RBLK 51 RBLK
BF 49 BF
CP2 48 CP2
VD 47 VD
FBLK 46 FBLK
FWHD 45 FWHD
FVD 44 FVD
M1 40 M1
M2 39 M2
M3 38 M3
DLPF 17
DPCO 22
VCXO 20
CXIN 33
CXOUT 34

Fig. 5-1

IC DESCRIPTION

1. IC507 on the Process Circuit section of the Main Board is using the Microprocessor IC M37702M4L284.
Description of this IC is as follows:


60 RXD1
59 TXD1
58 A0
57 A1
56 A2
55 A3
54 A4
53 A5
52 A6
51 A7
50 A8
49 A9
48 A10
47 A11
46 A12
45 A13
44 A14
43 A15
42 D0
41 D1
CLK1 61
CTS1/RTS1 62
TXD0 63
RXD0 64
CLK0 65
CTS0/RTS0 66
VCC 67
AVCC 68
VREF 69
AVSS 70
VSS 71
AN7 72
AN6 73
AN5 74
AN4 75
AN3 76
AN2 77
AN1 78
AN0 79
P67 80
M37702M4L284GP
40 D2
39 D3
38 D4
37 D5
36 D6
35 D7
34 R/W
33 BHE
32 ALE
31 HLDA
30 VSS
29 E
28 XOUT
27 XIN
26 RESET
25 CNVSS
24 BYTE
23 HOLD
22 RDY
21 P42
1 P66
2 P65
3 INT2
4 INT1
5 INT0
6 P61
7 P60
8 P57
9 P56
10 P55
11 P54
12 P53
13 P52
14 P51
15 P50
16 P47
17 P46
18 P45
19 P44
20 P43

(TOP VIEW)

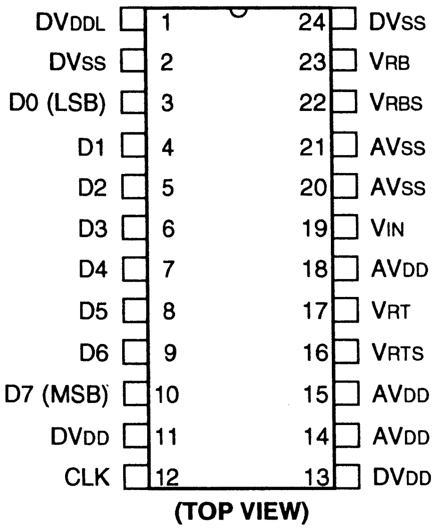
Pin	Name	I/O	Description
1	P66	O	A4FSC signal output terminal.
2	P65	I	SLPF signal input terminal.
3	$\overline{\text{INT2}}$	I	Reset signal input terminal.
4	$\overline{\text{INT1}}$	I	IRQ signal input terminal.
5	$\overline{\text{INT0}}$	I	FVD signal input terminal.
6	P61	O	STB signal output terminal.
7	P60	I	V4 signal input terminal.
8	P57	I	P57 signal input terminal.
9	P56	I	P56 signal input terminal.
10	P55	I	KI5 signal input terminal.
11	P54	I	KI4 signal input terminal.
12	P53	I	KI3 signal input terminal.
13	P52	I	KI2 signal input terminal.

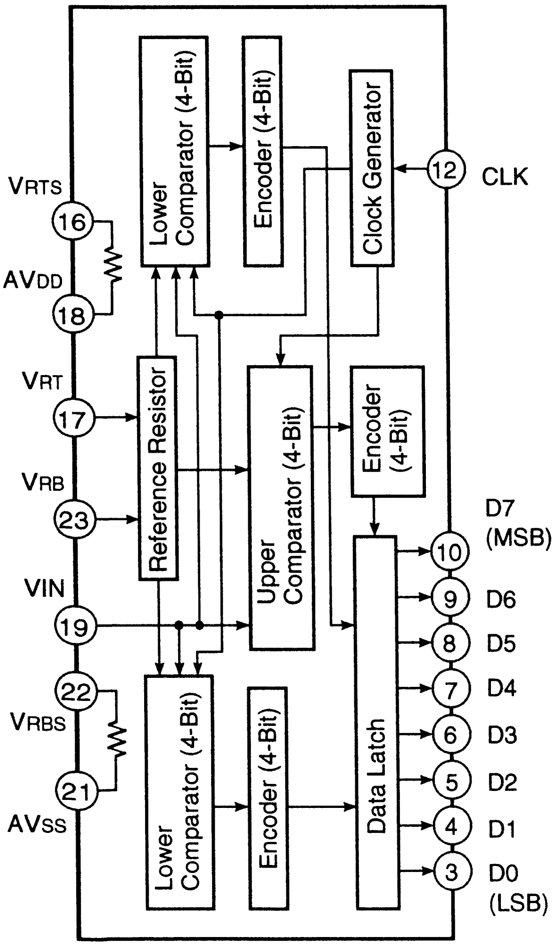
Pin	Name	I/O	Description
14	P51	I	KI1 signal input terminal.
15	P50	I	KI0 signal input terminal.
16	P47	O	LD signal output terminal.
17	P46	O	LD signal output terminal.
18	P45	O	P45 signal output terminal.
19	P44	O	TEST signal output terminal.
20	P43	O	SCP1 signal output terminal.
21	P42	O	SCP0 signal output terminal.
22	$\overline{\text{RDY}}$	I	RDY signal input terminal.
23	$\overline{\text{HOLD}}$	I	HOLD signal input terminal.
24	BYTE	I	Bus Width Switching signal input terminal. L = 16-Bit Width H = 8-Bit Width

Pin	Name	I/O	Description
25	CNVSS	I	Processor Mode Switching signal input terminal. L = Single Chip mode H = Processor mode
26	$\overline{RESET}$	I	Reset signal input terminal.
27	XIN	I	Crystal input terminal.
28	XOUT	O	Crystal output terminal.
29	$\overline{E}$	O	Enable signal output terminal.
30	VSS	–	Ground terminal.
31	$\overline{HLDA}$	O	HLDA signal output terminal.
32	ALE	O	ALE signal output terminal.
33	$\overline{BHE}$	O	BHE signal output terminal.
34	R/$\overline{W}$	O	Read/Write Selection signal input terminal. L = Write mode H = Read mode
35	D7	I/O	D7 input/output terminal.
36	D6	I/O	D6 input/output terminal.
37	D5	I/O	D5 input/output terminal.
38	D4	I/O	D4 input/output terminal.
39	D3	I/O	D3 input/output terminal.
40	D2	I/O	D2 input/output terminal.
41	D1	I/O	D1 input/output terminal.
42	D0	I/O	D0 input/output terminal.
43	A15	O	ADR15 output terminal.
44	A14	O	ADR14 output terminal.
45	A13	O	ADR13 output terminal.
46	A12	O	ADR12 output terminal.
47	A11	O	ADR11 output terminal.
48	A10	O	ADR10 output terminal.
49	A9	O	ADR9 output terminal.
50	A8	O	ADR8 output terminal.
51	A7	O	ADR7 output terminal.
52	A6	O	ADR6 output terminal.
53	A5	O	ADR5 output terminal.
54	A4	O	ADR4 output terminal.
55	A3	O	ADR3 output terminal.
56	A2	O	ADR2 output terminal.
57	A1	O	ADR1 output terminal.
58	A0	O	ADR0 output terminal.
59	TXD1	O	TXD1 signal output terminal.
60	RXD1	I	RXD1 signal input terminal.

Pin	Name	I/O	Description
61	CLK	I	CLK signal output terminal.
62	$\overline{CTS1}$/ $\overline{RTS1}$	O	$\overline{CTS1}$/$\overline{RTS1}$ signal output terminal.
63	TXD0	O	TXD0 signal output terminal.
64	RXD0	I	RXD0 signal input terminal.
65	CLK0	O	CLK0 signal output terminal.
66	$\overline{CTS0}$/ $\overline{RTS0}$	O	$\overline{CTS0}$/$\overline{RTS0}$ signal output terminal.
67	VCC	–	Power supply terminal.
68	AVCC	–	Power supply terminal for A/D Converter circuit.
69	AVSS	–	Ground terminal for A/D Converter circuit.
70	VREF	I	Reference Voltage input terminal for A/D Converter circuit.
71	VSS	–	Ground terminal.
72	AN7	I	AN7 signal input terminal.
73	AN6	I	AN6 signal input terminal.
74	AN5	I	AN5 signal input terminal.
75	AN4	I	AN4 signal input terminal.
76	AN3	I	AN3 signal input terminal.
77	AN2	I	AN2 signal input terminal.
78	AN1	I	AN1 signal input terminal.
79	AN0	I	AN0 signal input terminal.
80	P67	O	P67 signal output terminal.

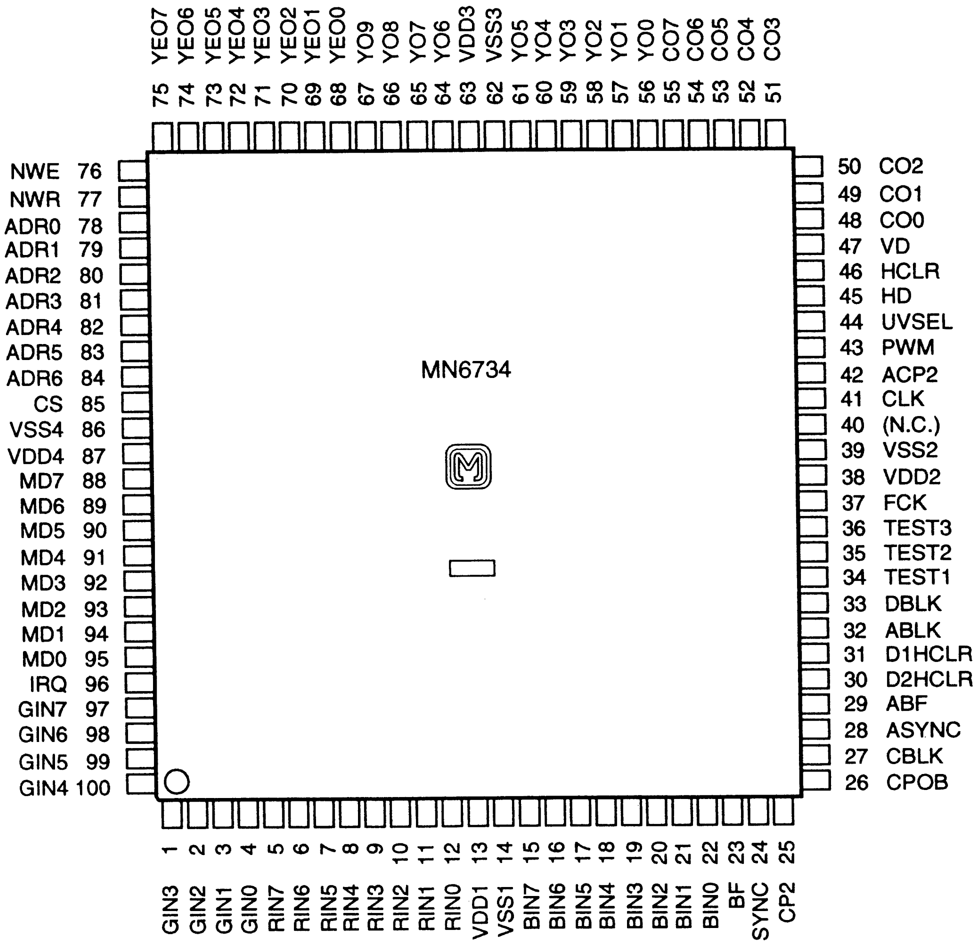
2. IC303, IC304 and IC305 on the Process Circuit section of the Main Board are using the 8-Bit Analog to Digital Converter IC MN655431SH.
Description of this IC is as follows:


DVDDL 1
DVSS 2
D0 (LSB) 3
D1 4
D2 5
D3 6
D4 7
D5 8
D6 9
D7 (MSB) 10
DVDD 11
CLK 12
24 DVSS
23 VRB
22 VRBS
21 AVSS
20 AVSS
19 VIN
18 AVDD
17 VRT
16 VRTS
15 AVDD
14 AVDD
13 DVDD
(TOP VIEW)


Lower Comparator (4-Bit)
Encoder (4-Bit)
Clock Generator
12 CLK
VRTS 16
AVDD 18
VRT 17
VRB 23
VIN 19
22 VRBS
21 AVSS
Reference Resistor
Upper Comparator (4-Bit)
Encoder (4-Bit)
Lower Comparator (4-Bit)
Encoder (4-Bit)
Data Latch
10 D7 (MSB)
9 D6
8 D5
7 D4
6 D3
5 D2
4 D1
3 D0 (LSB)

Pin	Name	I/O	Description
1	DVDDL	–	Power supply terminal for low-voltage-digital-output.
2	DVSS	–	Ground terminal for Digital Circuit.
3	D1	O	Digital Data D0 (MSB) output terminal.
4	D2	O	Digital Data D1 (7th.) output terminal.
5	D3	O	Digital Data D2 (6th.) output terminal.
6	D2	O	Digital Data D3 (5th.) output terminal.
7	D3	O	Digital Data D4 (4th.) output terminal.
8	D4	O	Digital Data D5 (3rd.) output terminal.
9	D5	O	Digital Data D6 (2nd.) output terminal.
10	D6	O	Digital Data D7 (LSB) output terminal.
11	DVDD	–	Power supply terminal for Digital Circuit.
12	CLK	I	Clock input terminal.
13	DVDD	–	Power supply terminal for Digital Circuit.
14	AVDD	–	Power supply terminal for Analog Circuit.
15	AVDD	–	Power supply terminal for Analog Circuit.
16	VRTS	O	Top Reference Voltage Source output terminal.
17	VRT	I	Top Reference Voltage input terminal.
18	AVDD	–	Power supply terminal for Analog Circuit.
19	VIN	I	Analog signal input terminal.
20	AVSS	–	Ground terminal for Analog Circuit.
21	AVSS	–	Ground terminal for Analog Circuit.
22	VRBS	O	Bottom Reference Voltage Source output terminal.
23	VRB	I	Bottom Reference Voltage input terminal.
24	DVSS	–	Ground terminal for Digital Circuit.

3. IC306 on the Process Circuit section of the Main Board is using the Y/C Digital Signal Processor IC MN6734.
Description of this IC is as follows:


MN6734
75 YEO7
74 YEO6
73 YEO5
72 YEO4
71 YEO3
70 YEO2
69 YEO1
68 YEO0
67 YO9
66 YO8
65 YO7
64 YO6
63 VDD3
62 VSS3
61 YO5
60 YO4
59 YO3
58 YO2
57 YO1
56 YO0
55 CO7
54 CO6
53 CO5
52 CO4
51 CO3
NWE 76
NWR 77
ADR0 78
ADR1 79
ADR2 80
ADR3 81
ADR4 82
ADR5 83
ADR6 84
CS 85
VSS4 86
VDD4 87
MD7 88
MD6 89
MD5 90
MD4 91
MD3 92
MD2 93
MD1 94
MD0 95
IRQ 96
GIN7 97
GIN6 98
GIN5 99
GIN4 100
50 CO2
49 CO1
48 CO0
47 VD
46 HCLR
45 HD
44 UVSEL
43 PWM
42 ACP2
41 CLK
40 (N.C.)
39 VSS2
38 VDD2
37 FCK
36 TEST3
35 TEST2
34 TEST1
33 DBLK
32 ABLK
31 D1HCLR
30 D2HCLR
29 ABF
28 ASYNC
27 CBLK
26 CPOB
1 GIN3
2 GIN2
3 GIN1
4 GIN0
5 RIN7
6 RIN6
7 RIN5
8 RIN4
9 RIN3
10 RIN2
11 RIN1
12 RIN0
13 VDD1
14 VSS1
15 BIN7
16 BIN6
17 BIN5
18 BIN4
19 BIN3
20 BIN2
21 BIN1
22 BIN0
23 BF
24 SYNC
25 CP2

(TOP VIEW)

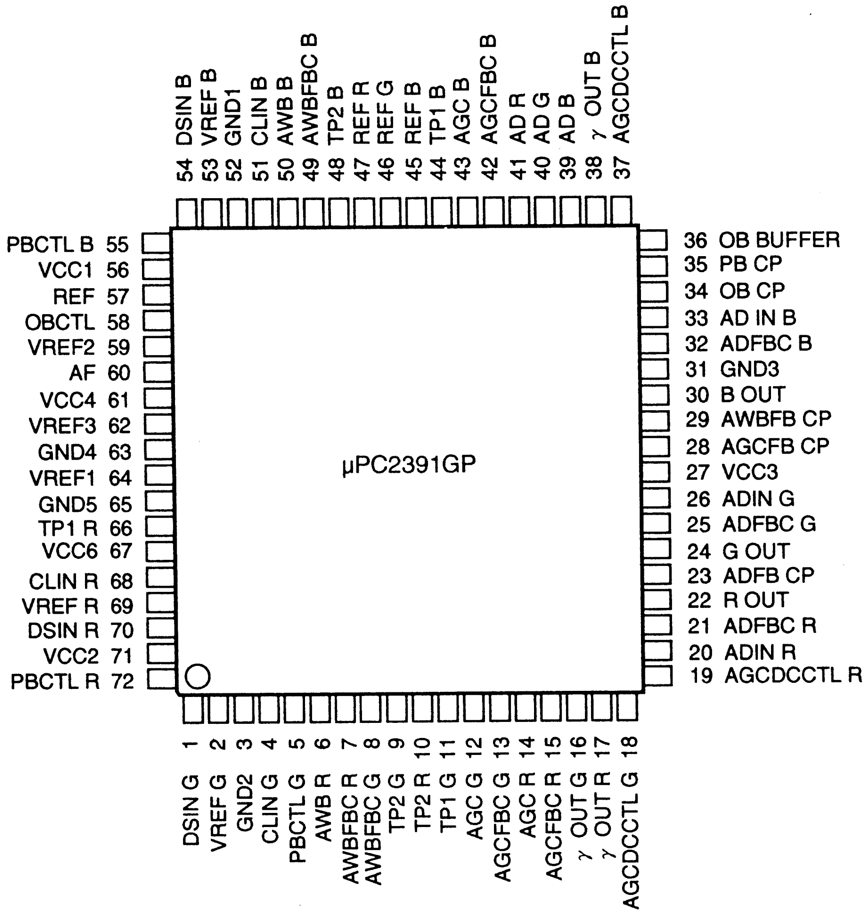
Pin	Name	I/O	Description
1	GIN3	I	(4th.)
2	GIN2	I	G signal input terminals. (8-Bit)
3	GIN1	I	
4	GIN0	I	(LSB)
5	RIN7	I	(MSB)
6	RIN6	I	
7	RIN5	I	
8	RIN4	I	R signal input terminals. (8-Bit)
9	RIN3	I	
10	RIN2	I	
11	RIN1	I	
12	RIN0	I	(LSB)
13	VDD1	–	Power supply terminal.

Pin	Name	I/O	Description
14	VSS1	–	Ground terminal.
15	BIN7	I	(MSB)
16	BIN6	I	
17	BIN5	I	
18	BIN4	I	B signal input terminals. (8-Bit)
19	BIN3	I	
20	BIN2	I	
21	BIN1	I	
22	BIN0	I	(LSB)
23	BF	I	Burst Gate signal input terminal.
24	SYNC	I	Sync signal input terminal.
25	CP2	I	Clamp Pulse input terminal.
26	CPOB	I	OB Clamp Pulse input terminal.

Pin	Name	I/O	Description
27	CBLK	I	Composite Blanking signal input terminal.
28	ASYNC	O	Composite Sync signal output terminal for Encoder.
29	ABF	O	Burst Flag Pulse output terminal for Encoder.
30	D2HCLR	O	HCLR Delay signal 2 output terminal (variable).
31	D1HCLR	O	HCLR Delay signal 1 output terminal (fixed).
32	ABLK	O	Blanking signal output terminal for L.P.F. and Sync Mixing.
33	DBLK	O	Blanking signal output terminal for D/D and Zoom.
34	TEST1	I	Test terminal. Normally fixed at L.
35	TEST2	I	Test terminal. Normally fixed at L.
36	TEST3	I	Test terminal. Normally fixed at L.
37	FCK	I	A/D Clock FCK signal input terminal.
38	VDD2	–	Power supply terminal.
39	VSS2	–	Ground terminal.
40	N.C.	–	Non connection.
41	CLK	I	Reference Clock input terminal.
42	ACP2	O	CP2 signal output terminal for D/D and Zoom.
43	PWM	O	PWM signal output terminal for Lens Iris Control.
44	UVSEL	O	U/V Signal Switching Pulse output terminal.
45	HD	I	HD Pulse input terminal.
46	HCLR	I	HCLR Pulse input terminal.
47	VD	I	VD Pulse input terminal.
48	CO0	O	(LSB)
49	CO1	O	
50	CO2	O	
51	CO3	O	Chroma signal output terminals. (8-Bit)
52	CO4	O	
53	CO5	O	
54	CO6	O	
55	CO7	O	(MSB)
56	YO0	O	(LSB)
57	YO1	O	
58	YO2	O	Luminance signal output terminals. (10-Bit)
59	YO3	O	
60	YO4	O	
61	YO5	O	(6th.)
62	VSS3	–	Ground terminal.
63	VDD3	–	Power supply terminal.
64	YO6	O	(7th.)
65	YO7	O	Luminance signal output terminals. (10-Bit)
66	YO8	O	
67	YO9	O	(MSB)

Pin	Name	I/O	Description
68	YEO0	O	(LSB)
69	YEO1	O	
70	YEO2	O	
71	YEO3	O	Luminance signal output terminals for Microprocessor. (8-Bit)
72	YEO4	O	
73	YEO5	O	
74	YEO6	O	
75	YEO7	O	(MSB)
76	NWE	I	Write Enable signal input terminal; active Low.
77	NWR	I	Write/Read switching signal input terminal. L = Write H = Read
78	ADR0	I	(LSB)
79	ADR1	I	
80	ADR2	I	
81	ADR3	I	Address signal input terminals. (7-Bit)
82	ADR4	I	
83	ADR5	I	
84	ADR6	I	(MSB)
85	CS	I	Chip Select signal input terminal; active High.
86	VDD1	–	Power supply terminal.
87	VSS1	–	Ground terminal.
88	MD7	I/O	(MSB)
89	MD6	I/O	
90	MD5	I/O	
91	MD4	I/O	Microprocessor Data Bus terminals. (8-Bit)
92	MD3	I/O	
93	MD2	I/O	
94	MD1	I/O	
95	MD0	I/O	(LSB)
96	IRQ	O	Microprocessor Enable signal IRQ output terminal.
97	GIN7	I	(MSB)
98	GIN6	I	G signal input terminals. (8-Bit)
99	GIN5	I	
100	GIN4	I	(5th.)

4. IC103 on the Process Circuit section of the Main Board is using the Preprocess IC µPC2391GP. Description of this IC is as follows:


54 DSIN B
53 VREF B
52 GND1
51 CLIN B
50 AWB B
49 AWBFBC B
48 TP2 B
47 REF R
46 REF G
45 REF B
44 TP1 B
43 AGC B
42 AGCFBC B
41 AD R
40 AD G
39 AD B
38 γ OUT B
37 AGCDCCTL B
PBCTL B 55
VCC1 56
REF 57
OBCTL 58
VREF2 59
AF 60
VCC4 61
VREF3 62
GND4 63
VREF1 64
GND5 65
TP1 R 66
VCC6 67
CLIN R 68
VREF R 69
DSIN R 70
VCC2 71
PBCTL R 72
36 OB BUFFER
35 PB CP
34 OB CP
33 AD IN B
32 ADFBC B
31 GND3
30 B OUT
29 AWBFB CP
28 AGCFB CP
27 VCC3
26 ADIN G
25 ADFBC G
24 G OUT
23 ADFB CP
22 R OUT
21 ADFBC R
20 ADIN R
19 AGCDCCTL R
µPC2391GP
1 DSIN G
2 VREF G
3 GND2
4 CLIN G
5 PBCTL G
6 AWB R
7 AWBFBC R
8 AWBFBC G
9 TP2 G
10 TP2 R
11 TP1 G
12 AGC G
13 AGCFBC G
14 AGC R
15 AGCFBC R
16 γ OUT G
17 γ OUT R
18 AGCDCCTL G

(TOP VIEW)

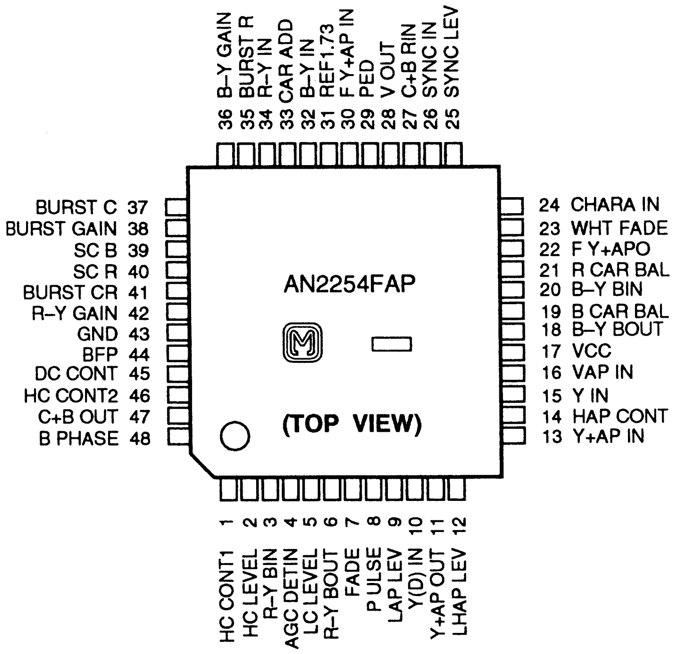
Pin	Name	I/O	Description
1	DSIN G	I	G-ch D/S Compensation signal input terminal.
2	VREF G	O	G-ch Reference Voltage output terminal (1.8V).
3	GND2	–	Ground terminal for R-ch and G-ch.
4	CLIN G	I	G-ch Signal input terminal.
5	PBCTL G	I	G-ch PBLK Control terminal.
6	AWB R	I	R-ch AWB Control terminal.
7	AWBFBC R	O	R-ch AWB Feedback terminal.
8	AWBFBC G	O	G-ch AWB Feedback terminal.
9	TP2 G	O	G-ch Test Point 2 output terminal.
10	TP2 R	O	R-ch Test Point 2 output terminal.
11	TP1 G	O	G-ch Test Point 1 output terminal.

Pin	Name	I/O	Description
12	AGC G	I	G-ch AGC Control terminal.
13	AGCFBC G	O	G-ch AGC Feedback terminal.
14	AGC R	O	R-ch AGC Control terminal.
15	AGCFBC R	O	R-ch AGC Feedback terminal.
16	γ OUT G	O	G-ch γ signal output terminal.
17	γ OUT R	O	R-ch γ signal output terminal.
18	AGCDCCTL G	O	G-ch γ Control terminal.
19	AGCDCCTL R	O	R-ch γ Control terminal.
20	ADIN R	I	R-ch ADAMP signal input terminal.
21	ADFBC R	O	R-ch ADAMP Feedback terminal.
22	R OUT	O	R-ch ADAMP signal output terminal.

Pin	Name	I/O	Description
23	ADFB CP	I	ADAMP CP signal input terminal.
24	G OUT	O	G-ch ADAMP signal output terminal.
25	ADFBC G	O	G-ch ADAMP Feedback terminal.
26	ADIN G	I	G-ch ADAMP signal input terminal.
27	VCC3	–	Power supply terminal for ADAMP and OB Buffer circuits (4.8V).
28	AGCFB CP	I	AGC CP signal input terminal.
29	AWBFB CP	I	AWB CP signal input terminal.
30	B OUT	O	B-ch ADAMP signal output terminal.
31	GND3	–	Ground terminal for ADAMP and OB BUFFER circuits.
32	ADFBC B	O	B-ch ADAMP Feedback terminal.
33	ADIN B	I	B-ch ADAMP signal input terminal.
34	OB CP	I	OB CP signal input terminal.
35	PB CP	I	PB CP signal input terminal.
36	OB BUFFER	O	OB Buffer Voltage output terminal.
37	AGCDCCTL B	O	B-ch γ Control terminal.
38	γ OUT B	O	B-ch γ signal output terminal.
39	AD B	I	B-ch ADAMP Gain control terminal.
40	AD G	I	G-ch ADAMP Gain control terminal.
41	AD R	I	R-ch ADAMP Gain control terminal.
42	AGCFBC B	O	B-ch AGC Feedback terminal.
43	AGC B	O	B-ch AGC Control terminal.
44	TP1 B	O	B-ch Test Point 1 output terminal.
45	REF B	O	B-ch Reference Voltage output terminal (2V).
46	REF G	O	G-ch Reference Voltage output terminal (2V).
47	REF R	O	R-ch Reference Voltage output terminal (2V).
48	TP2 B	O	B-ch Test Point 2 output terminal.
49	AWBFBC B	O	B-ch AWB Feedback terminal.
50	AWB B	I	B-ch AWB Control terminal.

Pin	Name	I/O	Description
51	CLIN B	I	B-ch signal input terminal.
52	GND1	–	Ground terminal for B-ch.
53	VREF B	O	B-ch Reference Voltage output terminal (1.8V).
54	DSIN B	I	B-ch D/S Compensation signal input terminal.
55	PBCTL B	I	B-ch PBLK Control terminal.
56	VCC1	–	Power supply terminal for B-ch (4.8V).
57	REF	O	Reference Voltage 3.5V output terminal.
58	OBCTL	I	OB Buffer Voltage input terminal.
59	VREF2	O	Reference Voltage 2 output terminal (1.5V).
60	AF	O	MATRIX signal output terminal.
61	VCC4	–	Power supply terminal for output stage of VREF circuit and CP circuit (4.8V).
62	VREF3	O	Reference Voltage 3 output terminal (3.5V).
63	GND4	–	Ground terminal for output stage of VREF circuit and CP circuit.
64	VREF1	O	Reference Voltage 1 output terminal (1.8V).
65	GND5	–	Ground terminal for MTX and VREF circuits.
66	TP1 R	O	R-ch Test Point 1 output terminal.
67	VCC6	–	Power supply terminal for R-ch (4.8V).
68	CLIN R	I	R-ch signal input terminal.
69	VREF R	O	R-ch Reference Voltage output terminal (1.8V).
70	DSIN R	I	R-ch D/S Compensation signal input terminal.
71	VCC2	–	Power supply terminal for G-ch (4.8V).
72	PBCTL R	I	R-ch PBLK Control terminal.

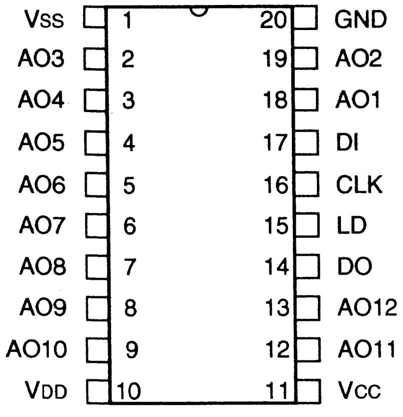
5. IC6 on the Encoder Circuit section of the Main Board is using the Video Movie Encoder IC AN2254AFP.
Description of this IC is as follows:


36 B–Y GAIN
35 BURST R
34 R–Y IN
33 CAR ADD
32 B–Y IN
31 REF1.73
30 F Y+AP IN
29 PED
28 V OUT
27 C+B RIN
26 SYNC IN
25 SYNC LEV
BURST C 37
BURST GAIN 38
SC B 39
SC R 40
BURST CR 41
R–Y GAIN 42
GND 43
BFP 44
DC CONT 45
HC CONT2 46
C+B OUT 47
B PHASE 48
AN2254FAP
(TOP VIEW)
24 CHARA IN
23 WHT FADE
22 F Y+APO
21 R CAR BAL
20 B–Y BIN
19 B CAR BAL
18 B–Y BOUT
17 VCC
16 VAP IN
15 Y IN
14 HAP CONT
13 Y+AP IN
1 HC CONT1
2 HC LEVEL
3 R–Y BIN
4 AGC DETIN
5 LC LEVEL
6 R–Y BOUT
7 FADE
8 PULSE
9 LAP LEV
10 Y(D) IN
11 Y+AP OUT
12 LHAP LEV

Pin	Name	I/O	Description
1	HC CONT1	I	High Chroma Control 1 signal input terminal.
2	HC LEVEL	I	High Chroma Control Level adjustment terminal.
3	R–Y BIN	I	R–Y Buffer input terminal.
4	AGC DET IN	I	AGC Detector DC input terminal.
5	LC LEVEL	I	Low Chroma Control Level adjustment terminal.
6	R–Y BOUT	O	R–Y Buffer output terminal.
7	FADE	I	Fade Control signal input terminal.
8	PULSE	I	CP, WHD and BLK Pulses input terminal. CP2 : 3.5V WHD : 2.0V C. BLK : 1.0V
9	LAP LEV	O	Low Luminance Aperture Control Level adjustment terminal.
10	Y(D) IN	I	YH delayed signal input terminal.
11	Y+AP OUT	O	Luminance and Aperture signals output terminal.
12	LHAP LEV	O	Horizontal Aperture Low Level Clip adjustment terminal.
13	Y+AP IN	I	Luminance and Aperture signals input terminal.
14	HAP CONT	I	Horizontal Aperture Gain adjustment terminal.
15	Y IN	I	YH (through) signal input terminal.
16	VAP IN	I	Vertical Aperture signal input terminal.
17	VCC	–	Power supply terminal.
18	B–Y BOUT	O	B–Y Buffer output terminal.
19	B CAR BAL	I	B–Y Carrier Balance adjustment terminal.
20	B–Y BIN	I	B–Y Buffer input terminal.
21	R CAR BAL	I	R–Y Carrier Balance adjustment terminal.
22	F Y+APO	O	Faded Luminance and Aperture signal output terminal.
23	WHT FADE	I	White Fade adjustment terminal.
24	CHARA IN	I	Character input terminal.
25	SYNC LEV	I	Sync signal Gain control terminal.
26	SYNC IN	I	Sync signal input terminal.
27	C+B RIN	I	Chroma and Burst signal input terminal.
28	V OUT	O	Video signal output terminal.
29	PED	I	Pedestal adjustment terminal.
30	F Y+AP IN	I	Faded Luminance and Aperture signals input terminal.
31	REF1.73	O	Reference Voltage output terminal (1.73V typ.)
32	B–Y IN	I	B–Y signal input terminal.
33	CAR ADD	I	Carrier Add adjustment terminal.
34	R–Y IN	I	R–Y signal input terminal.
35	BURST R	–	Resistor connecting terminal for Burst circuit.
36	B–Y Gain	I	B–Y Gain control terminal.
37	BURST C	–	Capacitor connecting terminal for Burst circuit.
38	BURST GAIN	I	Burst Gain control terminal.
39	SC B	I	Sub Carrier B input terminal.
40	SC R	I	Sub Carrier B input terminal.
41	BURST CR	–	Capacitor and Resistor connecting terminal for Burst circuit.
42	R–Y Gain	I	R–Y Gain control terminal.
43	GND	–	Ground terminal.
44	BFP	I	BFP signal input terminal.
45	DC CONT	–	DC Bias control terminal.
46	HC CONT2	I	High Chroma Control 2 signal input terminal.
47	C+B OUT	O	Chroma and Burst signals output terminal.
48	B PHASE	I	Burst Phase adjustment terminal.

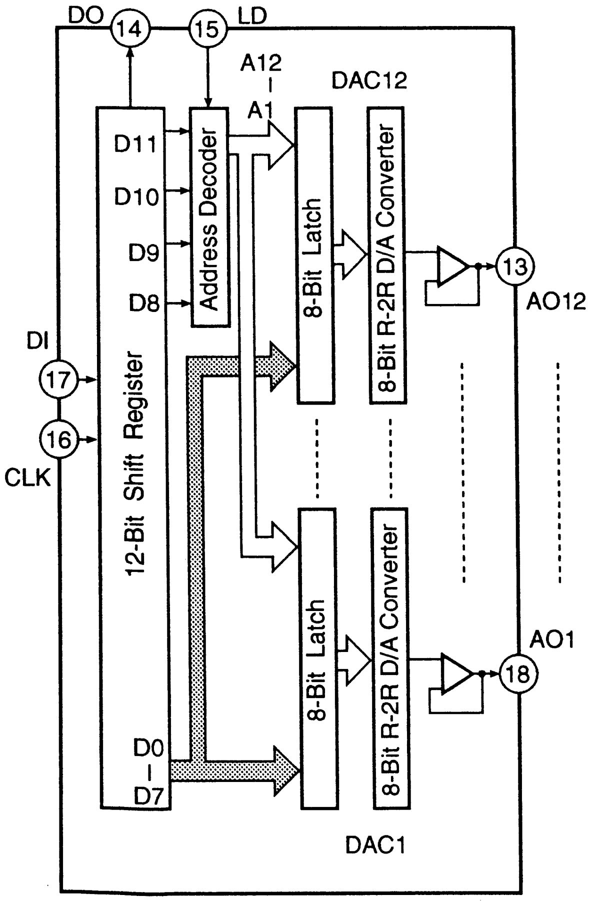
6. IC3 and IC13 on the Encoder Circuit section of the Main Board are using the 12-ch Digital to Analog Converter IC MB88346BEF.

Description of this IC is as follows:

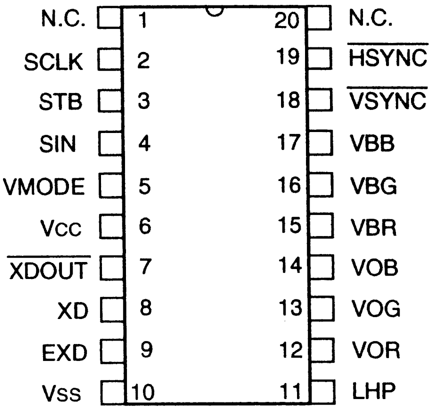

Vss 1
AO3 2
AO4 3
AO5 4
AO6 5
AO7 6
AO8 7
AO9 8
AO10 9
VDD 10
20 GND
19 AO2
18 AO1
17 DI
16 CLK
15 LD
14 DO
13 AO12
12 AO11
11 Vcc

(TOP VIEW)

Pin	Name	I/O	Description
1	Vss	–	Ground terminal for D/A Converter circuit.
2	AO3	O	Analog Data 3 output terminal.
3	AO4	O	Analog Data 4 output terminal.
4	AO5	O	Analog Data 5 output terminal.
5	AO6	O	Analog Data 6 output terminal.
6	AO7	O	Analog Data 7 output terminal.
7	AO8	O	Analog Data 8 output terminal.
8	AO9	O	Analog Data 9 output terminal.
9	AO10	O	Analog Data 10 output terminal.
10	VDD	–	Power supply terminal for D/A Converter circuit.
11	Vcc	–	Power supply terminal for MCU Interface and Ope-Amp. circuits.
12	AO11	O	Analog Data 11 output terminal.
13	AO12	O	Analog Data 12 output terminal.
14	DO	O	MSB Data output terminal from 12-Bit Shift Register.
15	LD	I	Load signal input terminal. Data of 12-Bit Shift Register should be loaded to Decoder and D/A Output Registers when LD = H.
16	CLK	I	Shift Clock input terminal. Serial Data from DI terminal should be input to Decoder and 12-Bit Shift Register at falling edge of this signal.
17	DI	I	12-Bit Serial Data input terminal.
18	AO1	O	Analog Data 6 output terminal.
19	AO2	O	Analog Data 6 output terminal.
20	GND	–	Ground terminal for MCU Interface and Ope-Amp. circuits.

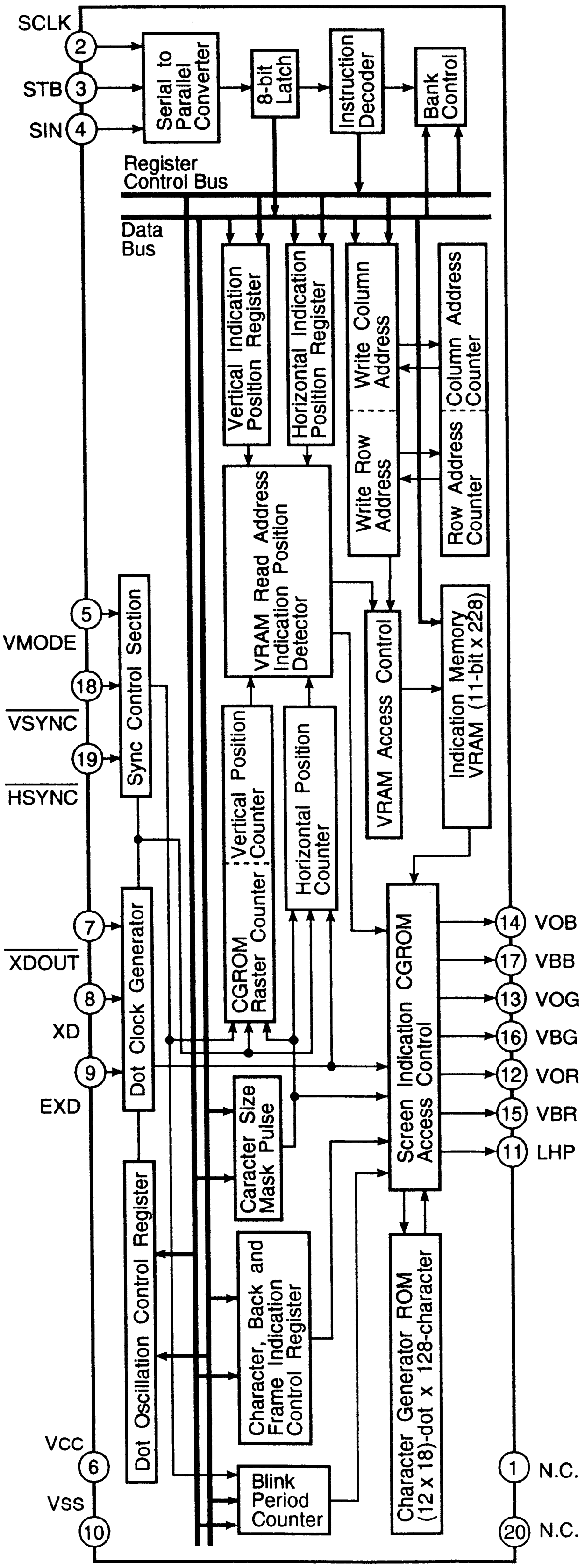

DO
14
15
LD
A12
A1
DAC12
D11
D10
D9
D8
Address Decoder
8-Bit Latch
8-Bit R-2R D/A Converter
13
AO12
DI
17
16
CLK
12-Bit Shift Register
8-Bit Latch
8-Bit R-2R D/A Converter
AO1
18
D0
D7
DAC1

7. IC8 on the Encoder Circuit section of the Main Board is using the Character Generator IC MB90077PF104. Description of this IC is as follows:

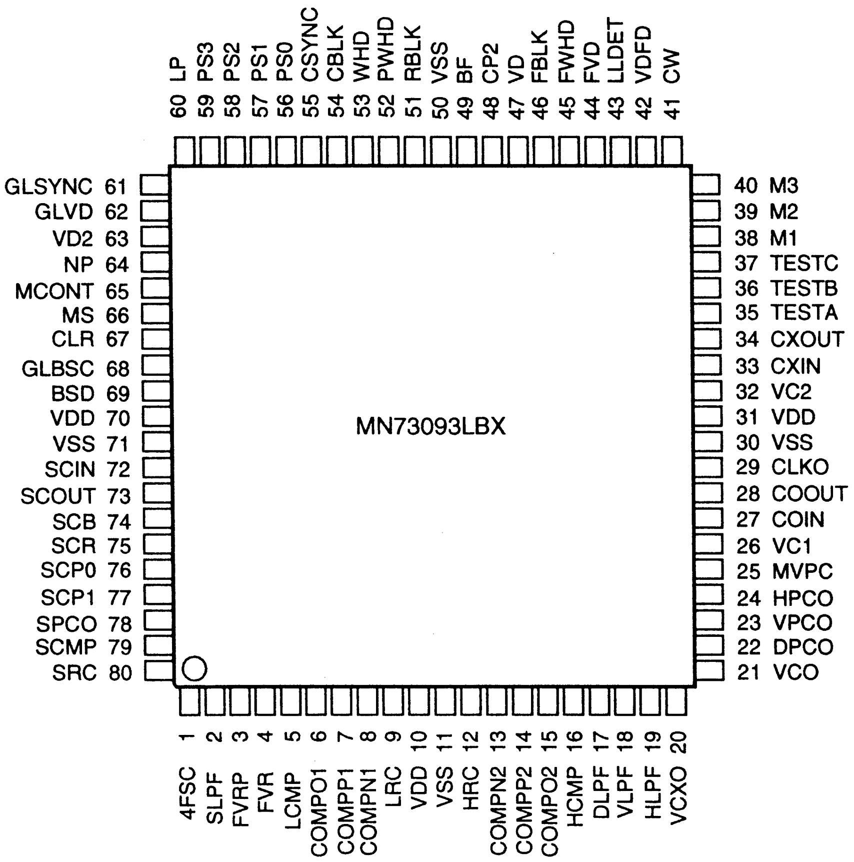

N.C. 1
SCLK 2
STB 3
SIN 4
VMODE 5
Vcc 6
$\overline{\text{XDOUT}}$ 7
XD 8
EXD 9
Vss 10
20 N.C.
19 $\overline{\text{HSYNC}}$
18 $\overline{\text{VSYNC}}$
17 VBB
16 VBG
15 VBR
14 VOB
13 VOG
12 VOR
11 LHP

(TOP VIEW)

Pin	Name	In/Out	Description
1	N.C.	–	Non Connection
2	SCLK	In	Serial Clock input terminal.
3	STB	In	Strobe Signal input terminal Serial Data should be read at rising edge of this signal.
4	SIN	In	Serial Data Input terminal for indication control.
5	VMODE	In	Effective edge changing input terminal for Vertical Sync Signal. "H" = Rising edge "L" = Falling edge
6	Vcc	–	+5V
7	$\overline{\text{XDOUT}}$	Out	Inverting output of XD signal.
8	XD	Out	External circuit terminals for Dot Clock Generator.
9	EXD	In	
10	Vss	–	Ground
11	LHP	Out	Line Hider Pulse output terminal.
12	VOR	Out	Color signal output terminals of RGB system.
13	VOG	Out	
14	VOB	Out	
15	VBR	Out	Blanking signal output terminals which indicating output of the character signal against the RGB system.
16	VBG	Out	
17	VBB	Out	
18	$\overline{\text{VSYNC}}$	In	Vertical Sync signal input terminal.
19	$\overline{\text{HSYNC}}$	In	Horizontal Sync signal input terminal.
20	N.C.	–	Non Connection


SCLK 2
STB 3
SIN 4
Serial to Parallel Converter
8-bit Latch
Instruction Decoder
Bank Control
Register Control Bus
Data Bus
Vertical Indication Position Register
Horizontal Indication Position Register
Write Column Address
Write Row Address
Column Address Counter
Row Address Counter
VRAM Read Address Indication Position Detector
VRAM Access Control
Indication Memory VRAM (11-bit x 228)
5 VMODE
18 $\overline{\text{VSYNC}}$
19 $\overline{\text{HSYNC}}$
Sync Control Section
Vertical Position Counter
CGROM Raster Counter
Horizontal Position Counter
7 $\overline{\text{XDOUT}}$
8 XD
9 EXD
Dot Clock Generator
Screen Indication CGROM Access Control
14 VOB
17 VBB
13 VOG
16 VBG
12 VOR
15 VBR
11 LHP
Caracter Size Mask Pulse
Dot Oscillation Control Register
Character, Back and Frame Indication Control Register
Character Generator ROM (12 x 18)-dot x 128-character
Blink Period Counter
VCC 6
VSS 10
1 N.C.
20 N.C.

8. IC1 on the Sync Circuit section of the Main Board is using the Sync Generator IC MN73093LBX.
Description of this IC is as follows:


MN73093LBX
1 4FSC
2 SLPF
3 FVRP
4 FVR
5 LCMP
6 COMPO1
7 COMPP1
8 COMPN1
9 LRC
10 VDD
11 VSS
12 HRC
13 COMPN2
14 COMPP2
15 COMPO2
16 HCMP
17 DLPF
18 VLPF
19 HLPF
20 VCXO
21 VCO
22 DPCO
23 VPCO
24 HPCO
25 MVPC
26 VC1
27 COIN
28 COOUT
29 CLKO
30 VSS
31 VDD
32 VC2
33 CXIN
34 CXOUT
35 TESTA
36 TESTB
37 TESTC
38 M1
39 M2
40 M3
41 CW
42 VDFD
43 LLDET
44 FVD
45 FWHD
46 FBLK
47 VD
48 CP2
49 BF
50 VSS
51 RBLK
52 PWHD
53 WHD
54 CBLK
55 CSYNC
56 PS0
57 PS1
58 PS2
59 PS3
60 LP
61 GLSYNC
62 GLVD
63 VD2
64 NP
65 MCONT
66 MS
67 CLR
68 GLBSC
69 BSD
70 VDD
71 VSS
72 SCIN
73 SCOUT
74 SCB
75 SCR
76 SCP0
77 SCP1
78 SPCO
79 SCMP
80 SRC

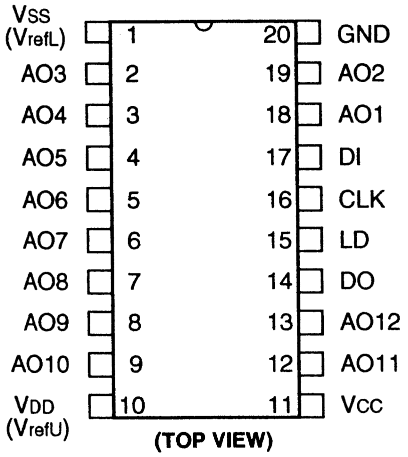
(TOP VIEW)

Pin	Name	I/O	Description
1	4FSC	O	4FSC Signal output terminal.
2	SLPF	I	SLPF signal input terminal.
3	FVRP	I	FVRP signal input terminal.
4	FVR	I	FVR signal input terminal.
5	LCMP	I	LCMP signal input terminal.
6	COMPO1	O	COMPO1 signal output terminal.
7	COMPP1	O	COMPP1 signal output terminal.
8	COMPN1	O	COMPN1 signal output terminal.
9	LRC	O	LRC signal output terminal.
10	VDD	–	+5V supply terminal.
11	VSS	–	Ground terminal.
12	HRC	O	HRC signal output terminal.
13	COMPN2	O	COMPN2 signal output terminal.
14	COMPP2	O	COMPP2 signal output terminal.
15	COMPO2	O	COMPO2 signal output terminal.
16	HCMP	I	HCMP signal input terminal.
17	DLPF	I	DLPF signal input terminal.
18	VLPF	I	VLPF signal input terminal.
19	HLPF	I	HLPF signal input terminal.
20	VCXO	O	VCXO signal output terminal.
21	VCO	O	VCO signal output terminal.
22	DPCO	O	DPCO signal output terminal.

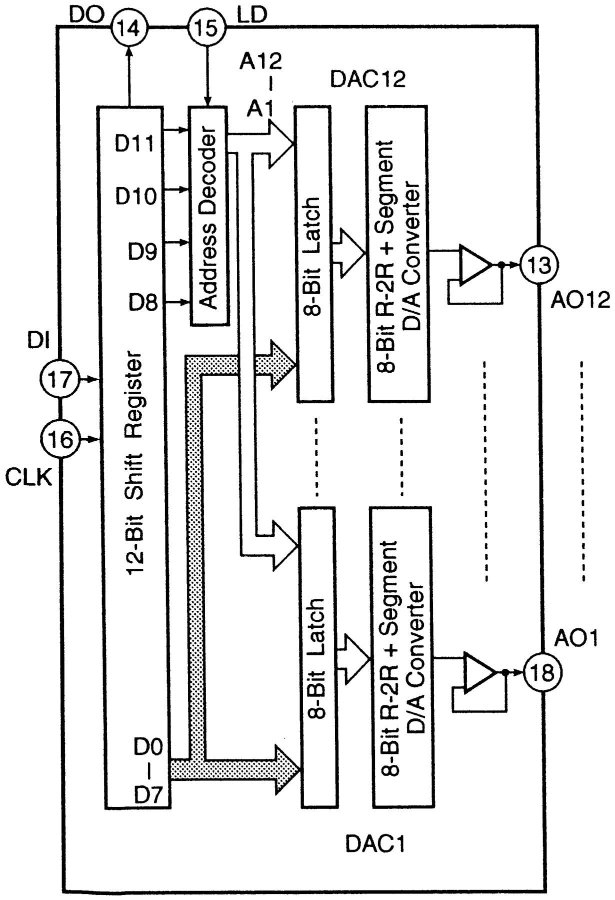
Pin	Name	I/O	Description
23	VPCO	O	VPCO signal input terminal.
24	HPCO	O	HPCO signal input terminal.
25	MVPC	I	MVPC signal input terminal.
26	VC1	O	VC1 signal input terminal.
27	COIN	I	COIN signal input terminal.
28	COOUT	O	COOUT signal output terminal.
29	CLKO	O	CLKO signal output terminal.
30	VSS	–	Ground terminal.
31	VDD	–	+5V supply terminal.
32	VC2	O	VC2 signal input terminal.
33	CXIN	I	CXIN signal input terminal.
34	CXOUT	O	CXOUT signal output terminal.
35	TESTA	I	TESTA signal input terminal.
36	TESTB	I	TESTB signal input terminal.
37	TESTC	I	TESTC signal input terminal.
38	M1	I/O	M1 signal in/out terminal.
39	M2	I/O	M2 signal in/out terminal.
40	M3	I/O	M3 signal in/out terminal.
41	CW	I	CW signal input terminal.
42	VDFD	I	VDFD signal input terminal.
43	LLDET	I	LLDET signal input terminal.
44	FVD	O	FVD signal output terminal.
45	FWHD	O	FWHD signal output terminal.
46	FBLK	O	FBLK signal output terminal.
47	VD	O	VD signal output terminal.
48	CP2	O	CP2 signal output terminal.
49	BF	O	BF signal output terminal.
50	VSS	–	Ground terminal.
51	RBLK	I	RBLK signal input terminal.
52	PWHD	I	PWHD signal input terminal.
53	WHD	O	WHD signal output terminal.
54	CBLK	O	CBLK signal output terminal.
55	CSYNC	O	CSYNC signal output terminal.
56	PS0	I	PS0 signal output terminal.
57	PS1	I	PS1 signal output terminal.
58	PS2	I	PS2 signal output terminal.
59	PS3	I	PS3 signal output terminal.
60	LP	I	LP signal output terminal.
61	GLSYNC	I	GLSYNC signal output terminal.
62	GLVD	I	GLVD signal input terminal.
63	VD2	I	VD2 signal input terminal.

Pin	Name	I/O	Description
64	NP	I	NTSC/PAL switching signal input terminal. H = NTSC L = PAL
65	MCONT	I	MCONT signal input terminal.
66	MS	I	MS signal input terminal.
67	CLR	I	CLR signal output terminal.
68	GLBSC	I	GLBSC signal output terminal.
69	BSD	I	BSD signal output terminal.
70	VDD	–	+5V supply terminal.
71	VSS	–	Ground terminal.
72	SCIN	I	SCIN signal input terminal.
73	SCOUT	O	SCOUT signal output terminal.
74	SCBO	O	SCBO signal output terminal.
75	SCRO	O	SCRO signal output terminal.
76	SCP0	I	SCP0 signal input terminal.
77	SCP1	I	SCP1 signal input terminal.
78	SPCO	O	SPCO signal output terminal.
79	SCMP	I	SCMP signal output terminal.
80	SRC	O	SRC signal output terminal.

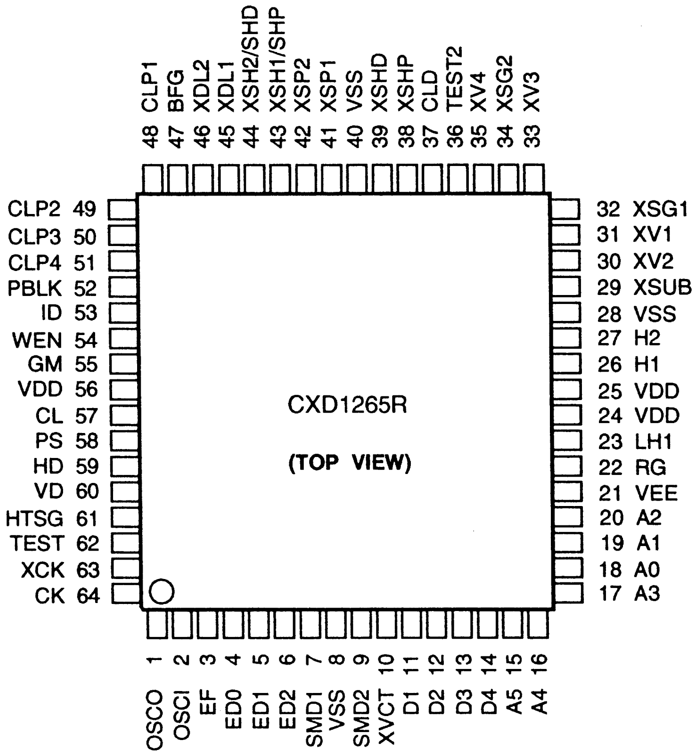
9. IC104 and IC111 on the Process Circuit section of the Main Board are using the 12-ch Digital to Analog Converter IC M62366GP.
Description of this IC is as follows:


Vss (VrefL)
AO3
AO4
AO5
AO6
AO7
AO8
AO9
AO10
VDD (VrefU)
1
2
3
4
5
6
7
8
9
10
20
19
18
17
16
15
14
13
12
11
GND
AO2
AO1
DI
CLK
LD
DO
AO12
AO11
Vcc
(TOP VIEW)

Pin	Name	I/O	Description
1	Vss (VrefL)	–	Lower reference voltage supply terminal for D/A Converter circuit.
2	AO3	O	Analog Data 3 output terminal.
3	AO4	O	Analog Data 4 output terminal.
4	AO5	O	Analog Data 5 output terminal.
5	AO6	O	Analog Data 6 output terminal.
6	AO7	O	Analog Data 7 output terminal.
7	AO8	O	Analog Data 8 output terminal.
8	AO9	O	Analog Data 9 output terminal.
9	AO10	O	Analog Data 10 output terminal.
10	VDD (VrefU)	–	Upper reference voltage supply terminal for D/A Converter circuit.
11	Vcc	–	Power supply terminal terminal.
12	AO11	O	Analog Data 11 output terminal.
13	AO12	O	Analog Data 12 output terminal.
14	DO	O	MSB Data output terminal from 12-Bit Shift Register.
15	LD	I	Load signal input terminal. Data of 12-Bit Shift Register should be loaded to Decoder and D/A Output Registers when LD = H.
16	CLK	I	Shift Clock input terminal. Serial Data from DI terminal should be input to Decoder and 12-Bit Shift Register at raising edge of this signal.
17	DI	I	12-Bit Serial Data input terminal.
18	AO1	O	Analog Data 1 output terminal.
19	AO2	O	Analog Data 2 output terminal.
20	GND	–	Ground terminal.


DO
14
15
LD
A12
A1
DAC12
D11
D10
D9
D8
Address Decoder
8-Bit Latch
8-Bit R-2R + Segment D/A Converter
13
AO12
DI
17
16
CLK
12-Bit Shift Register
AO1
18
D0
D7
DAC1

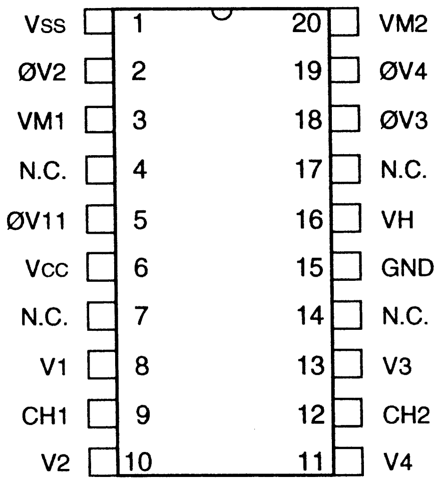
10. IC6 on the Drive Circuit section of the Main Board is using the Timing Generator IC CXD1265R.
Description of this IC is as follows:


48 CLP1
47 BFG
46 XDL2
45 XDL1
44 XSH2/SHD
43 XSH1/SHP
42 XSP2
41 XSP1
40 VSS
39 XSHD
38 XSHP
37 CLD
36 TEST2
35 XV4
34 XSG2
33 XV3
CLP2 49
CLP3 50
CLP4 51
PBLK 52
ID 53
WEN 54
GM 55
VDD 56
CL 57
PS 58
HD 59
VD 60
HTSG 61
TEST 62
XCK 63
CK 64
32 XSG1
31 XV1
30 XV2
29 XSUB
28 VSS
27 H2
26 H1
25 VDD
24 VDD
23 LH1
22 RG
21 VEE
20 A2
19 A1
18 A0
17 A3
CXD1265R
(TOP VIEW)
1 OSCO
2 OSCI
3 EF
4 ED0
5 ED1
6 ED2
7 SMD1
8 VSS
9 SMD2
10 XVCT
11 D1
12 D2
13 D3
14 D4
15 A5
16 A4

Pin	Name	I/O	Description
1	OSCO	O	Oscllation Inverter output terminal.
2	OSCI	I	Oscillation Inverter input terminal.
3	EF	I	Error Correction System Selecting signal input terminal. H = External ROM L = Serial signal from microprocessor
4	ED0	I	Shutter Speed Set signal input terminal. Strobe input terminal when Serial mode.
5	ED1	I	Shutter Speed Set signal input terminal. Clock input terminal when Serial mode.
6	ED2	I	Shutter Speed Set signal input terminal. Data input terminal when Serial mode.
7	SMD1	I	Shutter Mode Set signal input terminal.
8	VSS	–	Ground terminal.
9	SMD2	I	Shutter Mode Set signal input terminal.
10	XVCT	O	Power Control signal output terminal for external ROM.
11	D1	I	Data input terminal when using external ROM. Not using external ROM; L = without Error Correction H = with Error Correction
12	D2	I	Data input terminal when using external ROM. Not using external ROM; L = Color H = Black and White
13	D3	I	Data input terminal when using external ROM. Not using external ROM; fixed at Low.
14	D4	I	Data input terminal when using external ROM. Not using external ROM; L = NTSC H = PAL

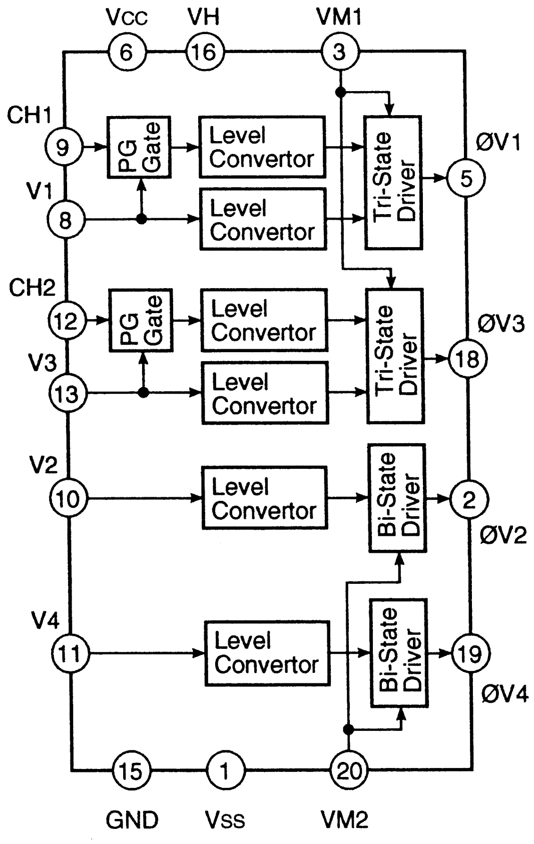
Pin	Name	I/O	Description
15	A5	O	Address output terminal for external ROM.
16	A4	O	Address output terminal for external ROM.
17	A3	O	Address output terminal for external ROM.
18	A0	O	Address output terminal for external ROM.
19	A0	O	Address output terminal for external ROM.
20	A0	O	Address output terminal for external ROM.
21	VEE	–	Ground terminal.
22	RG	O	Reset Gate signal output terminal.
23	LH1	O	Clock output terminal for last stage of CCD Horizontal Register.
24	VDD	–	Power supply terminal.
25	VDD	–	Power supply terminal for H1 and H2 circuits.
26	H1	O	Clock output terminal for CCD Horizontal Register Drive.
27	H2	O	Clock output terminal for CCD Horizontal Register Drive.
28	Vss	–	Ground terminal for H1 and H2 circuit.
29	XSUB	O	CCD Charge Clear Pulse output terminal.
30	XV2	O	Clock output terminal for CCD Vertical Register Drive.
31	XV1	O	Clock output terminal for CCD Vertical Register Drive.
32	XSG1	O	CCD Sensor Charge Read Out Pulse output terminal.
33	XV3	O	Clock output terminal for CCD Vertical Register Drive.
34	XSG2	O	CCD Sensor Charge Read Out Pulse output terminal.
35	XV4	O	Clock output terminal for CCD Vertical Register Drive.
36	TEST2	I	Test input terminal; Normally fixed at Low.
37	CLD	O	4fsc Clock output terminal.
38	XSHP	O	Pre-Charge Level Sample and Hold Pulse output terminal.
39	XSHD	O	Data Sample and Hold Pulse output terminal.
40	Vss	–	Ground terminal.
41	XSP1	O	Chroma Separation Sample and Hold Pulse output terminal. Stop at Black and White mode.
42	XSP2	O	Chroma Separation Sample and Hold Pulse output terminal. Stop at Black and White mode.
43	XSH1/ SHP	O	Switching Sample and Hold Pulse/Pre-Charge Level Sample and Hold Pulse (Black and White mode) output terminal.
44	XSH2/ SHP	O	Switching Sample and Hold Pulse/Pre-Charge Level Sample and Hold Pulse (Black and White mode) output terminal.
45	XDL1	O	Clock output terminal for Delay Line. Stop at Black and White mode.
46	XDL2	O	Clock output terminal for Delay Line. Stop at Black and White mode.
47	BFG	O	Encoder Chroma Modulator Pulse output terminal. Error Position Pointer Pulse when GM = High. Stop at Black and White mode.
48	CLP1	O	Clamp signal output terminal.
49	CLP2	I/O	Clamp signal output terminal. Standby Mode Switching signal input terminal when GM = High.
50	CLP3	I/O	Clamp signal output terminal. Standby Mode Switching signal input terminal when GM = High.
51	CLP4	O	Clamp signal output terminal.
52	PBLK	O	Blanking Cleaning Pulse output terminal.
53	ID	O	Line Identification signal output terminal.
54	WEN	O	Write Enable signal output terminal (only when slow speed shutter).
55	GM	I	H = Digital Signal Process L = Analog Signal Process
56	VDD	–	Power supply terminal.
57	CL	O	4fsc Clock output terminal.
58	PS	I	Electronic Shutter Speed mode switching signal input terminal. H = Parallel Input L = Serial Input
59	HD	I	Horizontal Sync signal input terminal.
60	VD	I	Vertical Sync signal input terminal.
61	HTSG	I	XSG1, 2 Control signal input terminal. H = XSG1, 2 generate L = XSG1, 2 stop
62	TEST	I	Test signal input terminal.
63	XCK	O	8fsc Clock output terminal.
64	CK	I	8fsc Clock input terminal.

11. IC2 on the Drive Circuit section of the Main Board is using the CCD Vertical Driver IC µPD16502GS.
Description of this IC is as follows:


Vss 1
ØV2 2
VM1 3
N.C. 4
ØV11 5
Vcc 6
N.C. 7
V1 8
CH1 9
V2 10
20 VM2
19 ØV4
18 ØV3
17 N.C.
16 VH
15 GND
14 N.C.
13 V3
12 CH2
11 V4

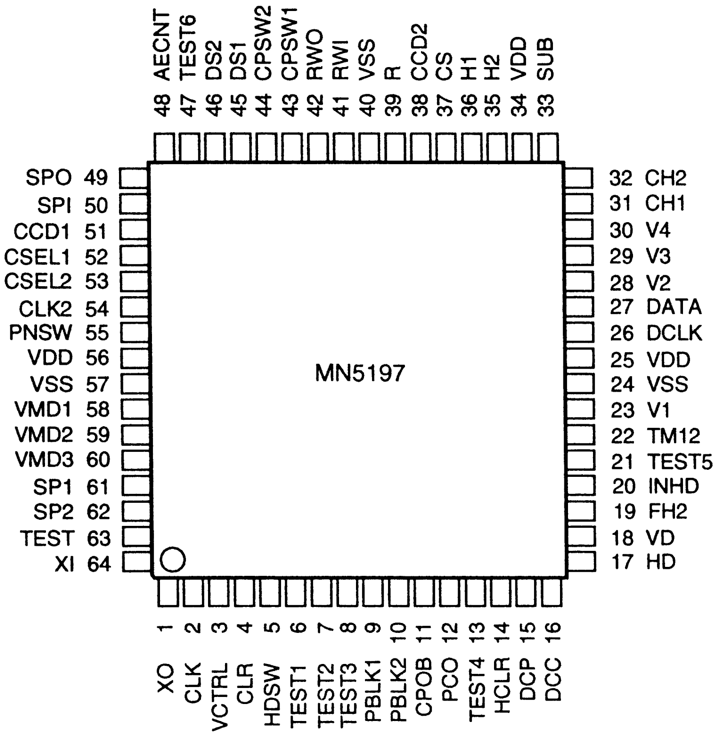
(TOP VIEW)

Pin	Name	I/O	Description
1	VSS	–	Negative Voltage supply terminal.
2	ØV2	O	Bi-State output terminal 1.
3	VM1	–	Middle Voltage supply terminal for Tri-State Drivers.
4	N.C.	–	Non Connection.
5	ØV1	O	Tri-State input terminal 1.
6	Vcc	–	Power supply for input circuit section.
7	N.C.	–	Non Connection.
8	V1	I	Tri-State input terminal 1.
9	CH1	I	Photodiode Gate input terminal 1.
10	V2	I	Bi-State input terminal 1.
11	V4	I	Bi-State input terminal 2.
12	CH2	I	Photodiode Gate input terminal 2.
13	V3	I	Tri-State input terminal 2.
14	N.C.	–	Non Connection.
15	GND	–	Ground terminal.
16	VH	–	High Voltage supply terminal for Tri-State Drivers.
17	N.C.	–	Non Connection.
18	ØV3	O	Tri-State input terminal 2.
19	ØV4	O	Bi-State output terminal 2.
20	VM2	–	Middle Voltage supply terminal for Bi-State Drivers.


Vcc
6
VH
16
VM1
3
CH1
9
PG Gate
Level Convertor
Tri-State Driver
5
ØV1
V1
8
Level Convertor
CH2
12
PG Gate
Level Convertor
Tri-State Driver
18
ØV3
V3
13
Level Convertor
V2
10
Level Convertor
Bi-State Driver
2
ØV2
V4
11
Level Convertor
Bi-State Driver
19
ØV4
15
GND
1
Vss
20
VM2

12. IC1 on the Drive Circuit section of the Main Board is using the 1/3" 510/670/768H CCD Driver with Phase Comparator IC MN5197.

Description of this IC is as follows:


MN5197
48 AECNT
47 TEST6
46 DS2
45 DS1
44 CPSW2
43 CPSW1
42 RWO
41 RWI
40 VSS
39 R
38 CCD2
37 CS
36 H1
35 H2
34 VDD
33 SUB
SPO 49
SPI 50
CCD1 51
CSEL1 52
CSEL2 53
CLK2 54
PNSW 55
VDD 56
VSS 57
VMD1 58
VMD2 59
VMD3 60
SP1 61
SP2 62
TEST 63
XI 64
32 CH2
31 CH1
30 V4
29 V3
28 V2
27 DATA
26 DCLK
25 VDD
24 VSS
23 V1
22 TM12
21 TEST5
20 INHD
19 FH2
18 VD
17 HD
1 XO
2 CLK
3 VCTRL
4 CLR
5 HDSW
6 TEST1
7 TEST2
8 TEST3
9 PBLK1
10 PBLK2
11 CPOB
12 PCO
13 TEST4
14 HCLR
15 DCP
16 DCC

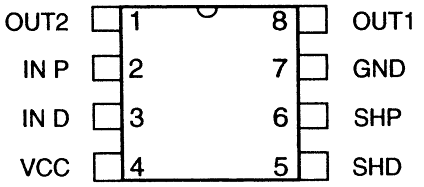
(TOP VIEW)

Pin	Name	I/O	Description
1	XO	O	Oscillator output terminal.
2	CLK	O	CLK signal output terminal.
3	VCTRL	I	VCTRL signal input terminal.
4	CLR	I	CLR signal input terminal.
5	HDSW	I	HDSW signal input terminal.
6	TEST1	I	Test terminal.
7	TEST2	I	Test terminal.
8	TEST3	I	Test terminal.
9	PBLK1	O	PBLK1 signal output terminal.
10	PBLK2	O	PBLK2 signal output terminal.
11	CPOB	O	CPOB signal output terminal.
12	PCO	O	PCO signal output terminal.
13	TEST4	I	Test terminal.
14	HCLR	O	HCLR signal output terminal.
15	DCP	O	DCP signal output terminal.
16	DCC	O	DCC signal output terminal.

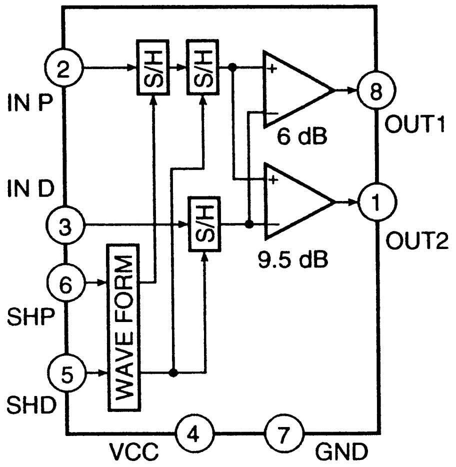
Pin	Name	I/O	Description
17	HD	I	HD signal input terminal.
18	VD	I	VD signal input terminal.
19	FH2	O	FH2 signal output terminal.
20	INHD	O	INHD signal output terminal.
21	TEST5	I	Test terminal.
22	TM12	I	TM12 signal input terminal.
23	V1	O	V1 signal output terminal.
24	VSS	–	Ground terminal.
25	VDD	–	Power supply terminal.
26	DCLK	I	DCLK signal input terminal.
27	DATA	I	DATA input terminal.
28	V2	O	V2 signal output terminal.
29	V3	O	V3 signal output terminal.
30	V4	O	V4 signal output terminal.
31	CH1	O	CH1 signal output terminal.
32	CH2	O	CH2 signal output terminal.

Pin	Name	I/O	Description
33	SUB	O	SUB signal output terminal.
34	VDD	–	Power supply terminal.
35	H1	O	H1 signal output terminal.
36	H2	O	H2 signal output terminal.
37	CS	I	CS signal input terminal.
38	CCD2	I	CCD2 signal input terminal.
39	R	O	R signal output terminal.
40	VSS	–	Ground terminal.
41	RWI	I	RWI signal input terminal.
42	RWO	O	RWO signal output terminal.
43	CPSW1	I	CPSW1 signal input terminal.
44	CPSW2	I	CPSW2 signal input terminal.
45	DS1	O	DS1 signal output terminal.
46	DS2	O	DS2 signal output terminal.
47	TEST6	I	Test terminal.
48	AECNT	I	AECNT signal input terminal.
49	SPO	O	SPO signal output terminal.
50	SPI	I	SPI signal input terminal.
51	CCD1	I	CCD1 signal input terminal.
52	CSEL1	I	CSEL1 signal input terminal.
53	CSEL2	I	CSEL2 signal input terminal.
54	CLK2	O	CLK2 signal output terminal.
55	PNSW	I	PNSW signal input terminal.
56	VDD	–	Power supply terminal.
57	VSS	–	Ground terminal.
58	VMD1	I	VMD1 signal input terminal.
59	VMD2	I	VMD2 signal input terminal.
60	VMD3	I	VMD3 signal input terminal.
61	SP1	O	SP1 signal output terminal.
62	SP2	O	SP2 signal output terminal.
63	TEST	I	Test terminal.
64	XI	I	Oscillator input terminal.

13. IC1, IC2 and IC4 on the Interface Circuit section of the Main Board are using the Correlated Double Sampling IC CXA1439A.
Description of this IC is as follows:

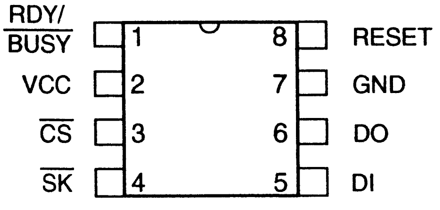


(TOP VIEW)

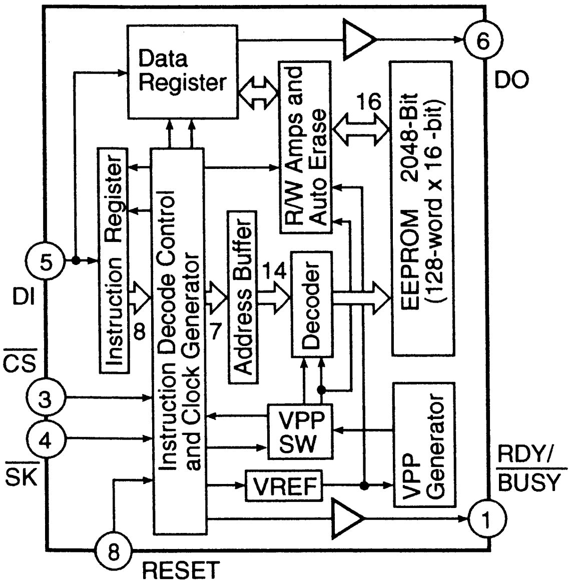


Pin	Name	I/O	Description
1	OUT 2	O	CDS signal (9.5 dB Gain) output terminal.
2	IN P	I	CCD signal input terminal.
3	IN D	I	CCD signal input terminal.
4	VCC	–	Power supply terminal.
5	SHD	I	High Speed Pulse input terminal for Sample and Hold. Active : High
6	SHP	I	High Speed Pulse input terminal for Sample and Hold. Active : High
7	GND	–	Ground terminal.
8	OUT1	O	CDS signal (6 dB Gain) output terminal.

14. IC505 on the Process Circuit section of the Main Board is using the 2048-Bit EEPROM IC AK6420F.
Description of this IC is as follows:

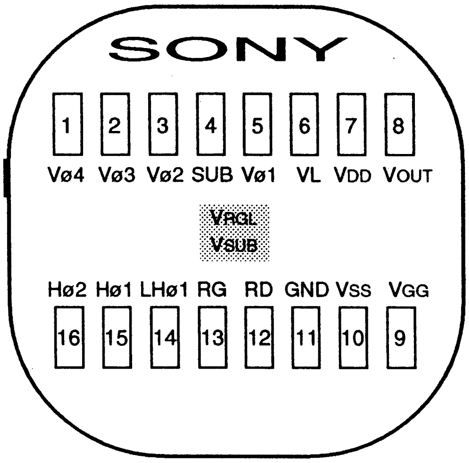

RDY/ BUSY
VCC
CS
SK
1
2
3
4
8
7
6
5
RESET
GND
DO
DI

(TOP VIEW)


Data Register
R/W Amps and Auto Erase
16
EEPROM 2048-Bit (128-word x 16-bit)
6
DO
Instruction Register
Instruction Decode Control and Clock Generator
Address Buffer
14
Decoder
8
7
5
DI
CS
3
4
SK
VPP SW
VREF
VPP Generator
RDY/ BUSY
1
8
RESET

Pin	Name	I/O	Description
1	RDY/ BUSY	O	Ready/Busy signal output terminal.
2	VCC	–	Power supply terminal.
3	CS	I	Chip Select signal input terminal.
4	SK	I	Serial Data Clock input terminal.
5	DI	I	Serial Data input terminal.
6	DO	O	Serial Data output terminal.
7	GND	–	Ground terminal.
8	RESET	I	Reset signal input terminal.

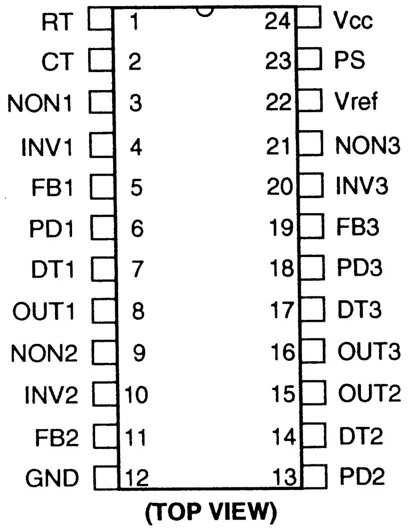
15. IC1, IC2 and IC3 on the Sensor Circuit of the Camera Head are using the 1/2" CCIR B/W CCD IC ICX038 BLB6.
Description of this IC is as follows:

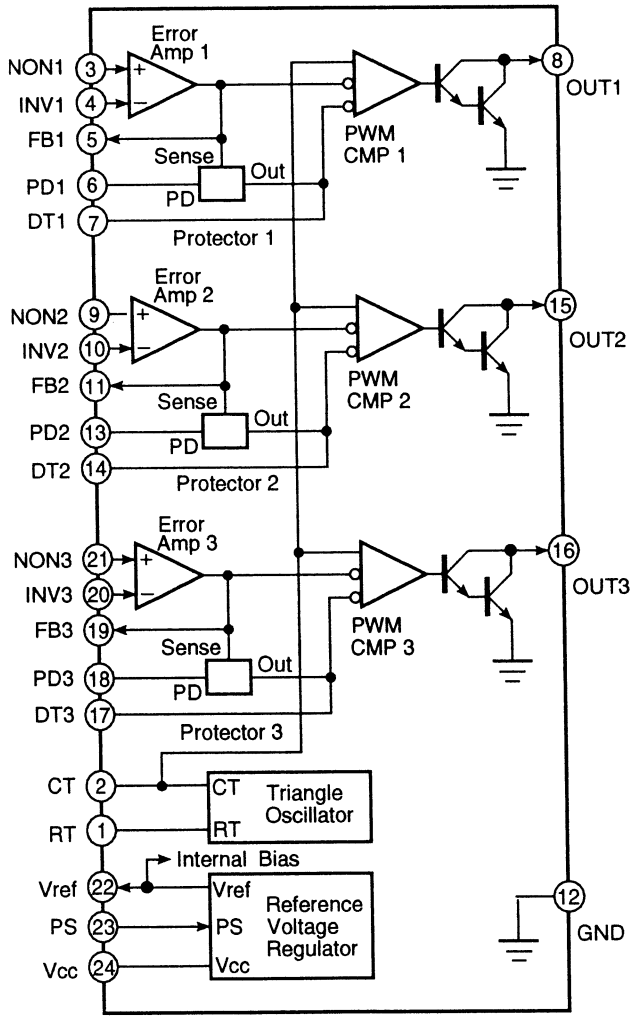

SONY
1
2
3
4
5
6
7
8
Vø4 Vø3 Vø2 SUB Vø1 VL VDD VOUT
VRGL
VSUB
Hø2 Hø1 LHø1 RG RD GND VSS VGG
16
15
14
13
12
11
10
9

(BOTTOM VIEW)

Pin	Name	I/O	Description
1	Vø4	I	Vertical Register Transfer Clock input terminal.
2	Vø3	I	Vertical Register Transfer Clock input terminal.
3	Vø2	I	Vertical Register Transfer Clock input terminal.
4	SUB	–	Board (Overflow Drain).
5	Vø1	I	Vertical Register Transfer Clock input terminal.
6	VL	I	Bias supply terminal for protection transistor.
7	VDD	–	Power supply terminal for Drain Output Amp.
8	VOUT	O	Signal output terminal.
9	VGG	–	Gate bias supply terminal for Output Amp.
10	VSS	–	Power supply terminal for Source Output Amp.
11	GND	–	Ground terminal.
12	RD	I	Reset Drain Bias input terminal.
13	RG	I	Reset Gate Clock input terminal.
14	LHø1	I	Transfer Clock input terminal for last stage of Horizontal register.
15	Hø1	I	Horizontal Register Transfer Clock input terminal.
16	Hø2	I	Horizontal Register Transfer Clock input terminal.

16. IC1 on the Power Board is using the 3-ch Switching Regulator Controller IC BA9702F.
Description of this IC is as follows:

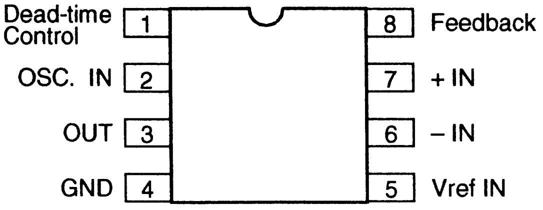

RT 1
CT 2
NON1 3
INV1 4
FB1 5
PD1 6
DT1 7
OUT1 8
NON2 9
INV2 10
FB2 11
GND 12
24 Vcc
23 PS
22 Vref
21 NON3
20 INV3
19 FB3
18 PD3
17 DT3
16 OUT3
15 OUT2
14 DT2
13 PD2
(TOP VIEW)

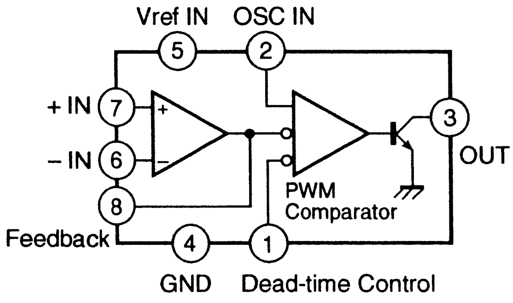

Error Amp 1
NON1 3
INV1 4
FB1 5
Sense
Out
PD1 6
PD
DT1 7
Protector 1
PWM CMP 1
8 OUT1
Error Amp 2
NON2 9
INV2 10
FB2 11
Sense
Out
PD2 13
PD
DT2 14
Protector 2
PWM CMP 2
15 OUT2
Error Amp 3
NON3 21
INV3 20
FB3 19
Sense
Out
PD3 18
PD
DT3 17
Protector 3
PWM CMP 3
16 OUT3
CT 2
RT 1
CT
RT
Triangle Oscillator
Internal Bias
Vref 22
PS 23
Vcc 24
Vref
PS
Vcc
Reference Voltage Regulator
12 GND

Pin	Name	I/O	Description
1	RT	–	Timing Resistor connecting terminal for Triangle Oscillator.
2	CT	–	Timing Capacitor connecting terminal for Triangle Oscillator.
3	NON1	I	Error Amp. 1 Non-inverting input terminal.
4	INV1	I	Error Amp. 1 Inverting input terminal.
5	FB1	O	Error Amp. 1 output terminal.
6	PD1	–	Protector 1 Timer Latch setting terminal.
7	DT1	–	PWM Comp 1 Dead Time setting terminal.
8	OUT1	O	PWM Comp 1 output terminal.
9	NON2	I	Error Amp. 2 Non-inverting input terminal.
10	INV2	I	Error Amp. 1 Inverting input terminal.
11	FB2	O	Error Amp. 2 output terminal.
12	GND	–	Ground terminal.
13	PD2	–	Protector 2 Timer Latch setting terminal.
14	DT2	–	PWM Comp 2 Dead Time setting terminal.
15	OUT2	O	PWM Comp 2 output terminal.
16	OUT3	O	PWM Comp 3 output terminal.
17	DT3	–	PWM Comp 3 Dead Time setting terminal.
18	PD3	–	Protector 3 Timer Latch setting terminal.
19	FB3	O	Error Amp. 3 output terminal.
20	INV3	I	Error Amp. 3 Inverting input terminal.
21	NON3	I	Error Amp. 3 Non-inverting input terminal.
22	Vref	O	Reference Voltage output terminal.
23	PS	I	Power Save signal input terminal.
24	Vcc	–	Power supply terminal.

17. IC2 on the Power Board is using the Switching Regulator IC BA9701F.

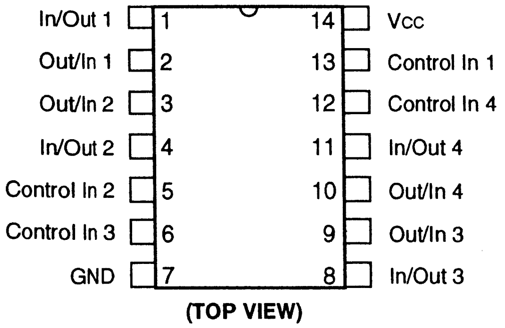
Description of this IC is as follows:


Dead-time Control 1
OSC. IN 2
OUT 3
GND 4
8 Feedback
7 + IN
6 – IN
5 Vref IN


Vref IN
OSC IN
5
2
+ IN 7
– IN 6
8
Feedback
3
OUT
PWM Comparator
4
1
GND
Dead-time Control

18. IC1 on the Encoder Circuit section of the Main Board is using the Quad Analog Switches/Demulti-plexers IC MC14066BF.

Description of this IC is as follows:

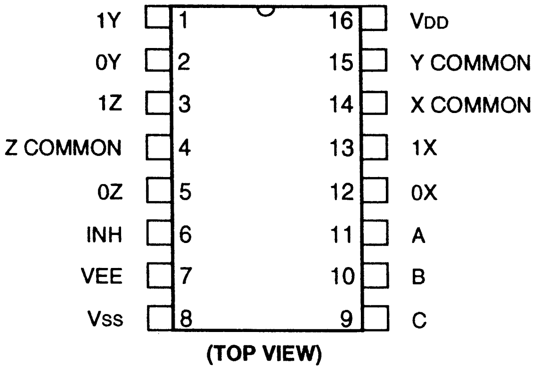

In/Out 1 1
Out/In 1 2
Out/In 2 3
In/Out 2 4
Control In 2 5
Control In 3 6
GND 7
14 Vcc
13 Control In 1
12 Control In 4
11 In/Out 4
10 Out/In 4
9 Out/In 3
8 In/Out 3
(TOP VIEW)

Truth Table

Input	Switch
Control	I/O – O/I
L	OFF
H	ON

19. IC112 on the Process Circuit section of the Main Board is using the Triple 2-ch Analog Multiplexers/ Demultiplexers IC MC14053BF.

Description of this IC is as follows:


1Y 1
0Y 2
1Z 3
Z COMMON 4
0Z 5
INH 6
VEE 7
Vss 8
16 VDD
15 Y COMMON
14 X COMMON
13 1X
12 0X
11 A
10 B
9 C
(TOP VIEW)

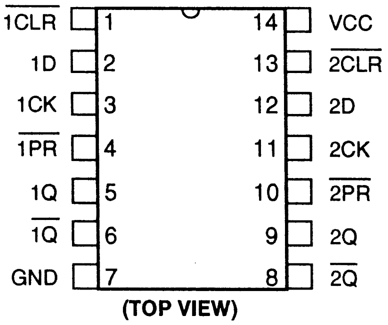
Truth Table

INHIBIT	C	B	A	X COMMON	Y COMMON	Z COMMON
L	L	L	L	0X	0Y	0Z
L	L	L	H	1X	0Y	0Z
L	L	H	L	0X	1Y	0Z
L	L	H	H	1X	1Y	0Z
L	H	L	L	0X	0Y	1Z
L	H	L	H	1X	0Y	1Z
L	H	H	L	0X	1Y	1Z
L	H	H	H	1X	1Y	1Z
H	*	*	*	NONE	NONE	NONE

* : Don't care.

20. IC516 on the Process Circuit section of the Main Board is using the Dual D-FFs with Preset and Clear IC TC74AC74FSR.

Description of this IC is as follows:

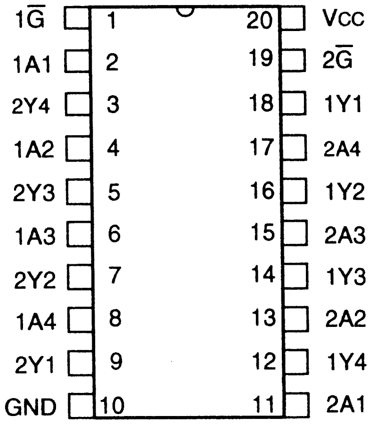

$\overline{1CLR}$ 1
1D 2
1CK 3
$\overline{1PR}$ 4
1Q 5
$\overline{1Q}$ 6
GND 7
14 VCC
13 $\overline{2CLR}$
12 2D
11 2CK
10 $\overline{2PR}$
9 2Q
8 $\overline{2Q}$
(TOP VIEW)

Truth Table

INPUTS				OUTPUTS		Function
$\overline{CLR}$	$\overline{PR}$	D	CK	Q	$\overline{Q}$	
L	H	*	*	L	H	Clear
H	L	*	*	H	L	Preset
L	L	*	*	H	H	——
H	H	L	↑	L	H	——
H	H	H	↑	H	L	——
H	H	*	↓	Qn	$\overline{Qn}$	No Change

* : Don't care.

21. IC301 on the Process Circuit section and IC16 on the Interface Circuit section of the Main Board are using the Octal 3-State Bus Buffers IC TC74AC244 FSR. Description of this IC is as follows:


1$\overline{G}$ 1 20 Vcc
1A1 2 19 2$\overline{G}$
2Y4 3 18 1Y1
1A2 4 17 2A4
2Y3 5 16 1Y2
1A3 6 15 2A3
2Y2 7 14 1Y3
1A4 8 13 2A2
2Y1 9 12 1Y4
GND 10 11 2A1

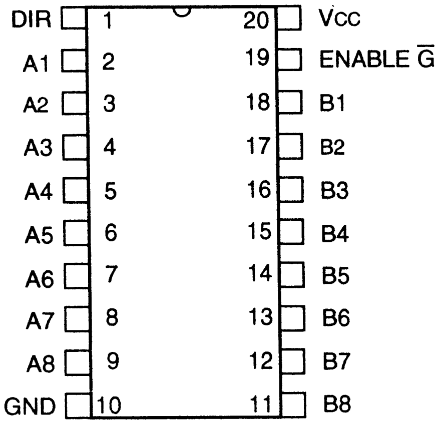
(TOP VIEW)

Truth Table

INPUTS		OUTPUT
$\overline{G}$	A	Y
H	*	Z
L	L	L
L	H	H

* : Don't care.
Z : High Impedance

22. IC510 on the Process Circuit section of the Main Board is using the Octal 3-State Bus Transceivers IC TC74 AC245FSR. Description of this IC is as follows:


DIR 1 20 Vcc
A1 2 19 ENABLE $\overline{G}$
A2 3 18 B1
A3 4 17 B2
A4 5 16 B3
A5 6 15 B4
A6 7 14 B5
A7 8 13 B6
A8 9 12 B7
GND 10 11 B8

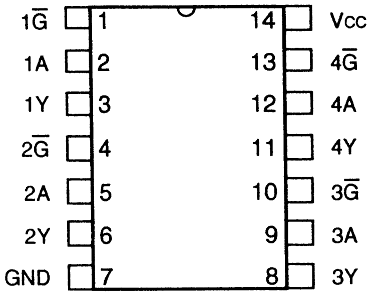
(TOP VIEW)

Truth Table

INPUTS		Function
DIR	$\overline{G}$	
H	L	A ⟶ B
L	L	B ⟶ A
*	H	A OFF B

* : Don't care.

23. IC501 and IC502 on the Process Circuit section of the Main Board are using the Quad 3-State Bus Buffers IC 74HC125PWTR. Description of this IC is as follows:


1$\overline{G}$ 1 14 Vcc
1A 2 13 4$\overline{G}$
1Y 3 12 4A
2$\overline{G}$ 4 11 4Y
2A 5 10 3$\overline{G}$
2Y 6 9 3A
GND 7 8 3Y

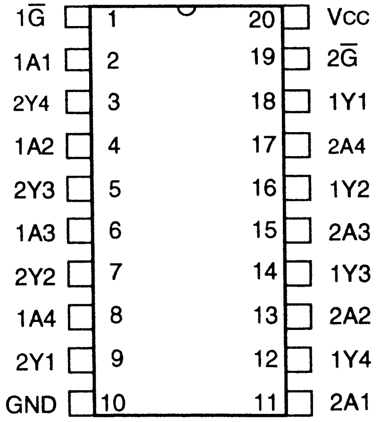
(TOP VIEW)

Truth Table

INPUTS		OUTPUT
$\overline{G}$	A	Y
H	*	Z
L	L	L
L	H	H

* : Don't care.
Z : High Impedance

24. IC12 on the Drive Circuit section of the Main Board is using the Octal 3-State Bus Buffers IC SN74HC244DB. Description of this IC is as follows:


1$\overline{G}$ 1 20 Vcc
1A1 2 19 2$\overline{G}$
2Y4 3 18 1Y1
1A2 4 17 2A4
2Y3 5 16 1Y2
1A3 6 15 2A3
2Y2 7 14 1Y3
1A4 8 13 2A2
2Y1 9 12 1Y4
GND 10 11 2A1

(TOP VIEW)

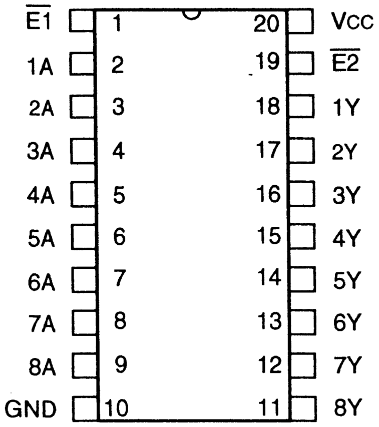
Truth Table

INPUTS		OUTPUT
$\overline{G}$	A	Y
H	*	Z
L	L	L
L	H	H

* : Don't care.
Z : High Impedance

25. IC1 on the Front Board is using the Octal 3-State Bus Buffers IC MC74HC541F.

Description of this IC is as follows:


$\overline{E1}$ 1
1A 2
2A 3
3A 4
4A 5
5A 6
6A 7
7A 8
8A 9
GND 10
20 Vcc
19 $\overline{E2}$
18 1Y
17 2Y
16 3Y
15 4Y
14 5Y
13 6Y
12 7Y
11 8Y

(TOP VIEW)

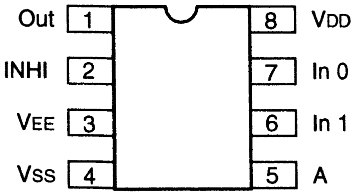
Truth Table

INPUTS		OUTPUT
$\overline{E1}$	$\overline{E2}$	Y
L	L	A
H	*	Z
*	H	

* : Don't care.
Z : High Impedance

26. IC113, IC114, IC115, IC118 and IC119 on the Process Circuit section, and IC11 and IC12 on the Encoder Circuit section of the Main Board are using the Single 2-ch Analog Multiplexer/ Demulti-plexer IC TC4W53 FUR.

Description of this IC is as follows:


Out 1
INHI 2
VEE 3
Vss 4
8 VDD
7 In 0
6 In 1
5 A

(TOP VIEW)

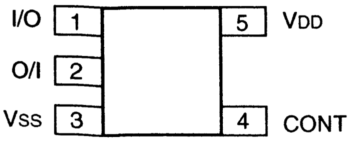
Truth Table

INPUTS		OUT
INHI	A	
L	L	IN 0
L	H	IN 1
H	*	None

*: Don't Care.

27. IC12 on the Interface Board and IC105, IC106 and IC107 on the Process Circuit section of the Main Board are using the Single Analog Switch/ Multiplexer IC TC7S66FUR.

Description of this IC is as follows:


I/O 1
O/I 2
Vss 3
5 VDD
4 CONT

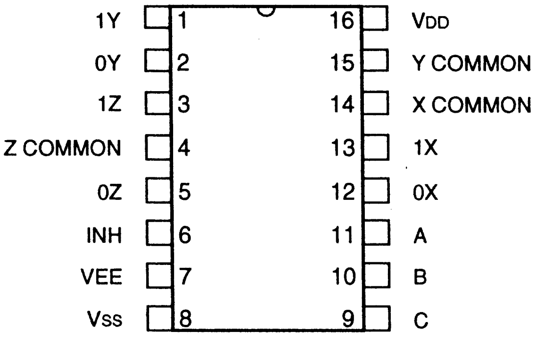
(TOP VIEW)

Truth Table

Input	Switch
Control	I/O – O/I
L	OFF
H	ON

28. IC14 on the Interface Circuit section and IC2 on the Encoder Circuit section of the Main Board are using the Triple 2-ch Analog multiplexers/Demultiplexers IC MC74HC4053F.

Description of this IC is as follows:


1Y 1
0Y 2
1Z 3
Z COMMON 4
0Z 5
INH 6
VEE 7
Vss 8
16 VDD
15 Y COMMON
14 X COMMON
13 1X
12 0X
11 A
10 B
9 C

(TOP VIEW)

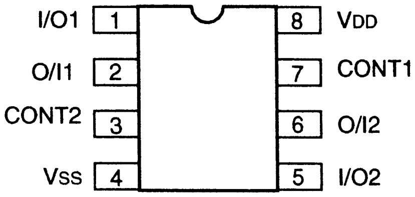
Truth Table

INHIBIT	C	B	A	X COMMON	Y COMMON	Z COMMON
L	L	L	L	0X	0Y	0Z
L	L	L	H	1X	0Y	0Z
L	L	H	L	0X	1Y	0Z
L	L	H	H	1X	1Y	0Z
L	H	L	L	0X	0Y	1Z
L	H	L	H	1X	0Y	1Z
L	H	H	L	0X	1Y	1Z
L	H	H	H	1X	1Y	1Z
H	*	*	*	NONE	NONE	NONE

* : Don't care.

29. IC503 on the Process Circuit section of the Main Board is using the Dual Analog Switches/Multiplex-ers IC TC4W66FUR.

Description of this IC is as follows:

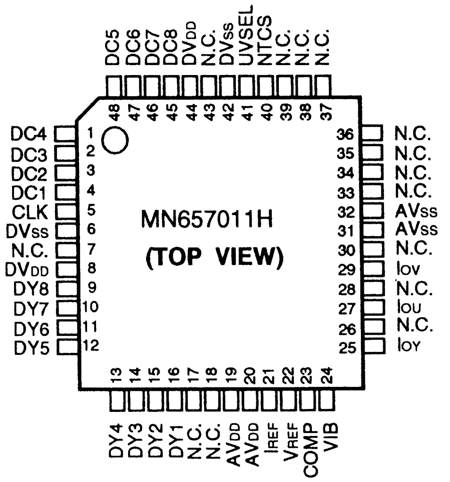

I/O1 1
O/I1 2
CONT2 3
Vss 4
8 VDD
7 CONT1
6 O/I2
5 I/O2

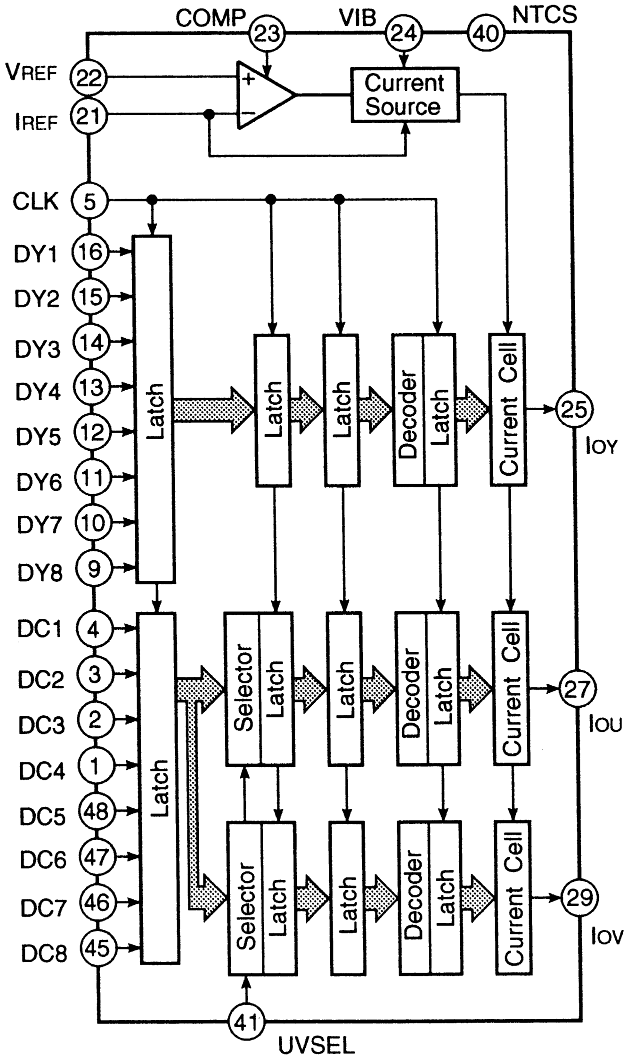
(TOP VIEW)

Truth Table

Input	Switch
Control	I/O – O/I
L	OFF
H	ON

30. IC308 on the Process Circuit section of the Main Board is using the 8-Bit 3-ch D/A Conveter IC MN657011H. Description of this IC is as follows:

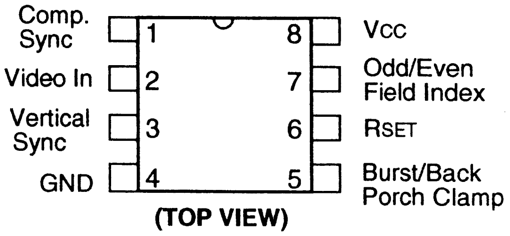

MN657011H
(TOP VIEW)
DC4 1
DC3 2
DC2 3
DC1 4
CLK 5
DVss 6
N.C. 7
DVDD 8
DY8 9
DY7 10
DY6 11
DY5 12
DY4 13
DY3 14
DY2 15
DY1 16
N.C. 17
N.C. 18
AVDD 19
AVDD 20
IREF 21
VREF 22
COMP 23
VIB 24
IOY 25
N.C. 26
IOU 27
N.C. 28
IOV 29
N.C. 30
AVss 31
AVss 32
N.C. 33
N.C. 34
N.C. 35
N.C. 36
N.C. 37
N.C. 38
N.C. 39
NTCS 40
UVSEL 41
DVss 42
N.C. 43
DVDD 44
DC8 45
DC7 46
DC6 47
DC5 48


COMP 23
VIB 24
40 NTCS
VREF 22
IREF 21
+
−
Current Source
CLK 5
DY1 16
DY2 15
DY3 14
DY4 13
DY5 12
DY6 11
DY7 10
DY8 9
DC1 4
DC2 3
DC3 2
DC4 1
DC5 48
DC6 47
DC7 46
DC8 45
Latch
Latch
Latch
Decoder
Latch
Current Cell
25 IOY
Latch
Selector
Latch
Latch
Decoder
Latch
Current Cell
27 IOU
Selector
Latch
Latch
Decoder
Latch
Current Cell
29 IOV
41 UVSEL

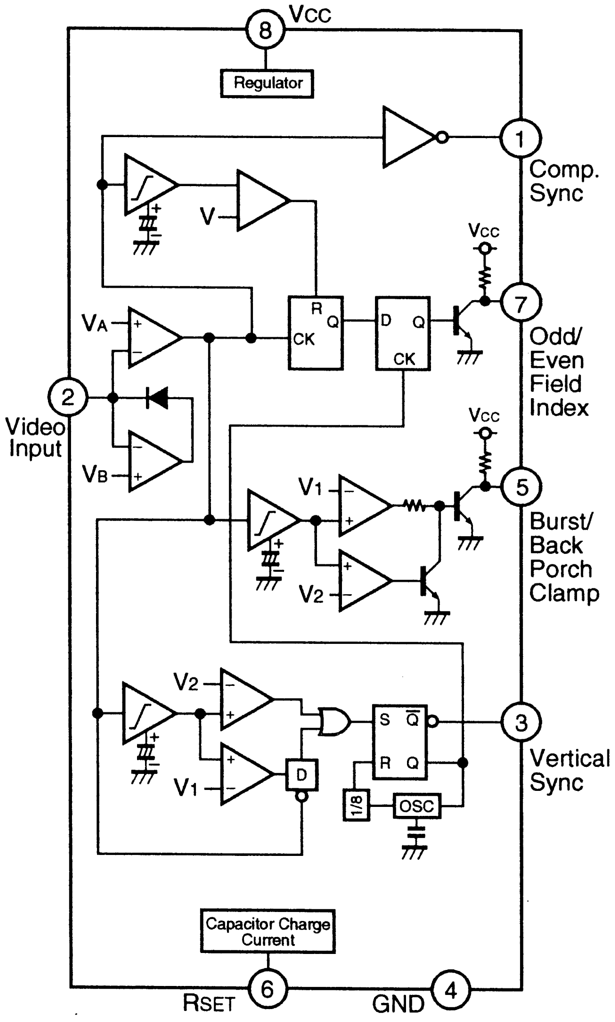
Pin	Name	I/O	Description
1	DC4	I	Chroma Digital Data (5th.) input terminal.
2	DC3	I	Chroma Digital Data (6th.) input terminal.
3	DC2	I	Chroma Digital Data (7th.) input terminal.
4	DC1	I	Chroma Digital Data (MSB) input terminal.
5	CLK	I	Clock input terminal.
6	DVss	–	Ground terminal for Digital Circuit.
7	N.C.	–	Non Connection.
8	DVDD	–	+5V supply terminal for Digital Circuit.
9	DY8	I	Luminance Digital Data (LSB) input terminal.
10	DY7	I	Luminance Digital Data (2nd.) input terminal.
11	DY6	I	Luminance Digital Data (3rd.) input terminal.
12	DY5	I	Luminance Digital Data (4th.) input terminal.
13	DY4	I	Luminance Digital Data (5th.) input terminal.
14	DY3	I	Luminance Digital Data (6th.) input terminal.
15	DY2	I	Luminance Digital Data (7th.) input terminal.
16	DY1	I	Luminance Digital Data (MSB) input terminal.
17	N.C.	–	Non Connection.
18	N.C.	–	Non Connection.
19	AVDD	–	+5V supply terminal for Analog Circuit.
20	AVDD	–	+5V supply terminal for Analog Circuit.
21	IREF	I	Full scale adjuting resistor connecting terminal.
22	VREF	I	Reference Voltage supply terminal.
23	COMP	I	Phase compensation input terminal.
24	VIB	I	Capacitor connecting terminal.

Pin	Name	I/O	Description
25	IOY	O	R signal analog current signal output terminal.
26	N.C.	–	Non Connection.
27	IOU	O	G signal analog current output terminal.
28	N.C.	–	Non Connection.
29	IOV	O	B signal analog current output terminal.
30	N.C.	–	Non Connection.
31	AVSS	–	Ground terminal for Analog Circuit.
32	AVSS	–	Ground terminal for Analog Converter Circuit.
33	N.C.	–	Non Connection.
34	N.C.	–	Non Connection.
35	N.C.	–	Non Connection.
36	N.C.	–	Non Connection.
37	N.C.	–	Non Connection.
38	N.C.	–	Non Connection.
39	N.C.	–	Non Connection.
40	NTCS	I	Chroma signal 2's Complement /Binary Selectimg signal input terminal. L = 2's Complement input H = Binary input
41	UVSEL	I	Chroma U and Chroma V Selecting signal input terminal. L = U signal H = V signal
42	DVSS	–	Ground terminal for Digital Circuit.
43	N.C.	–	Non Connection.
44	VVDD	–	+5V supply terminal for Digital Circuit.
45	DC8	I	Chroma Digital Data (LSB) input terminal.
46	DC7	I	Chroma Digital Data (2nd.) input terminal.
47	DC6	I	Chroma Digital Data (3rd.) input terminal.
48	DC5	I	Chroma Digital Data (4th.) input terminal.

31. IC5 on the Sync Circuit section of the Main Board is using the Sync Separator IC YWLM1881M.
Description of this IC is as follows:


Comp. Sync
Video In
Vertical Sync
GND
1
2
3
4
8
7
6
5
Vcc
Odd/Even Field Index
RSET
Burst/Back Porch Clamp

(TOP VIEW)


8
Vcc
Regulator
1
Comp. Sync
V
Vcc
7
Odd/Even Field Index
VA
VB
2
Video Input
R
Q
CK
D
Q
CK
V1
V2
Vcc
5
Burst/Back Porch Clamp
V2
V1
D
S
Q̄
R
Q
1/8
OSC
3
Vertical Sync
Capacitor Charge Current
RSET
6
GND
4

About Your Computer

In order to run the E.V.R. (Electric Variable Resistor) adjustment program your IBM PC/AT type or compatible must meet the following requirements:

- The DOS Operating System must be 3.3 or higher.
- The Operating System must be 100% compatible with your computer.
- The memory in your IBM-PC must be at least 640K-bytes, and 512K-bytes shall be available to the E.V.R. adjustment program.

Installing E.V.R. Adjustment Program

- The Example given here is for A 2 drive computer, your procedure might vary slightly depending on drive configuration.
- Formatting new disk and making a copy of DOS Operating System.

  a) Insert disk containing DOS operating system into your floppy drive (for example, drive A) and type **A:**
  b) Insert new disk into your floppy drive (for example, drive B).
  c) Format and make a copy of DOS operating system from your original disk to new disk by typing **FORMAT B: / S** and press the **ENTER** key.
  d) Type **COPY ANSI. SYS B:** and press the **ENTER** key.

- Install E.V.R. Adjustment Program onto formatted new disk with DOS operating system.

  e) Take out original disk containing DOS operating system from your floppy drive (drive A) and insert disk containing E.V.R. adjustment program into your floppy drive (drive A) and type **A:**
  f) At the prompt, type **CD IBMPC** and press the **ENTER** key.
  g) If required, type **COPY CONFIG. SYS B**: and press the **ENTER** key.
  h) Type **CD PAL**.
  i) Type **COPY ADJ2E. EXE B:** and press the **ENTER** key.
  j) Type **CD ** and press the **ENTER** key.
  k) Type **CD SEQ** and press the **ENTER** key.
  l) Type **COPY US502E. SEQ B:** and press the **ENTER** key.
  m) Type **CD ** and press the **ENTER** key.
  n) Type **CD EVR** and press the **ENTER** key.
  o) Type **COPY US502E. EVR B:** and press the **ENTER** key.
  p) After completing installation of program, you are ready to use the E.V.R. adjustment program.

Note:

When completed the new disk should be a bootable disk which contains the following files:

1.	COMMAND	COM
2.	ANSI	SYS
3.	CONFIG	SYS
4.	ADJ2E	EXE
5.	US502E	SEQ
6.	US502E	EVR

Modification Procedure for E.V.R. Adjustment Kit

- **Before start to adjust the GP-US502E, your E.V.R. Adjustment Kit have to modify for up-to-date version.**

- The modification procedure is as follows:

- Referring to Fig. 1, remove four screws fixing the Upper Cover of the E.V.R. Adjustment Kit.

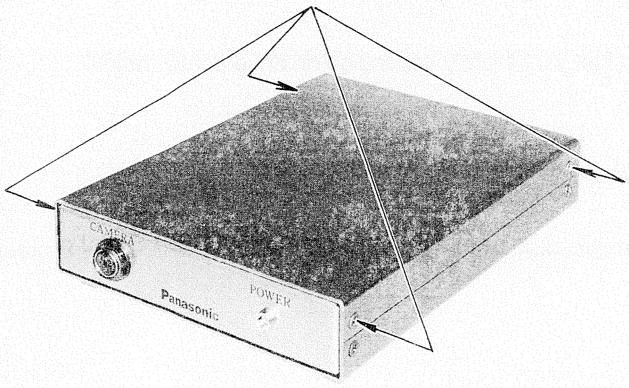

Remove four screws.
CAMERA
Panasonic
POWER

Fig. 1

- Referring to Fig. 2, remove IC5 (ROM IC) on the Main Board of the E.V.R. Adjustment Kit.

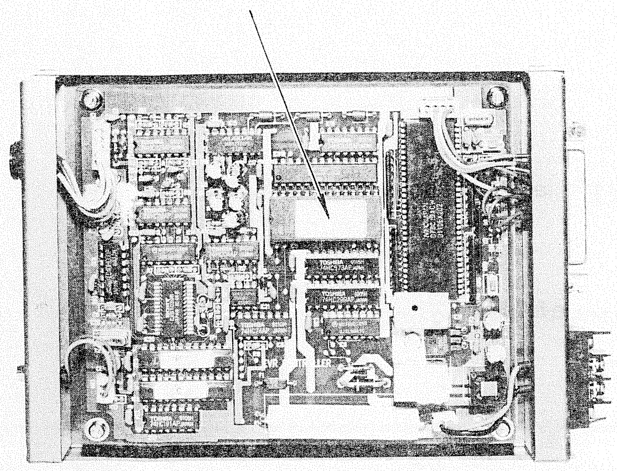

Pull out IC5 ROM IC from the IC Socket.

Fig. 2

- Mount the new ROM IC with IC Socket to the Main Board of the E.V.R. Adjustment Kit.

- Mount the Upper Cover of the E.V.R. Adjustment Kit.

- The part number of new ROM IC with IC Socket for E.V.R. Adjustment Kit is YWV0EA0274AN.

ADJUSTMENT PROCEDURE

1. Test Equipment Required

The following Test Equipments are required for adjustment of the GP-US502E.

- Oscilloscope
- Frequency Counter
- Digital Voltmeter
- Vectorscope
- Waveform Monitor
- Underscanned Colour Video Monitor
- Signal Generator (Black Burst or Composite Video Signal)
- 12V DC Power Supply Unit
- Lighting (140 footcandles (1,400 lux), 3,200 °K)
- Lux Meter
- Manual Iris Lens
- Camera Cable (GP-CA63)
- Personal Computer (IBM PC/AT or equivalent)
- Standard Straight RS-232C Cable
- White Chart or White Paper
- Colour Temperature Conversion Filters (3,200 °K to 5,200 °K) as shown in Table 1-1.

	Part No.	Description
KODAK	80B	More than 3x3 cm (1 sheet)
FUJI	LBB-12	More than 3x3 cm (1 sheet)
KENKO	C12	More than 20mmø (1 Piece)
HOYA	LB-120	More than 20mmø (1 Piece)
NICON	B12	More than 20mmø (1 Piece)

Table 1-1

- Electric Variable Resistor (E.V.R.) Adjustment Kit (Part Number: YWV0EA0182AN) as shown in Fig. 1-1.

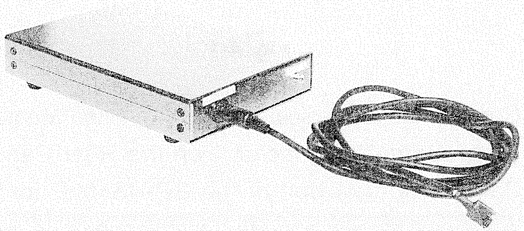


Fig. 1-1.

- Logarithmic Gray Scale Chart (Part Number: YWV2310RB99) as shown in Fig. 1-2.

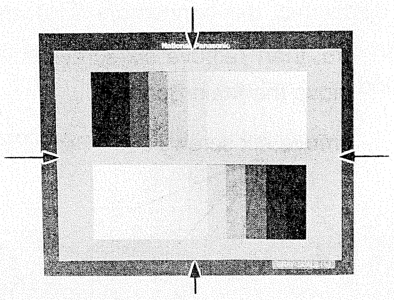
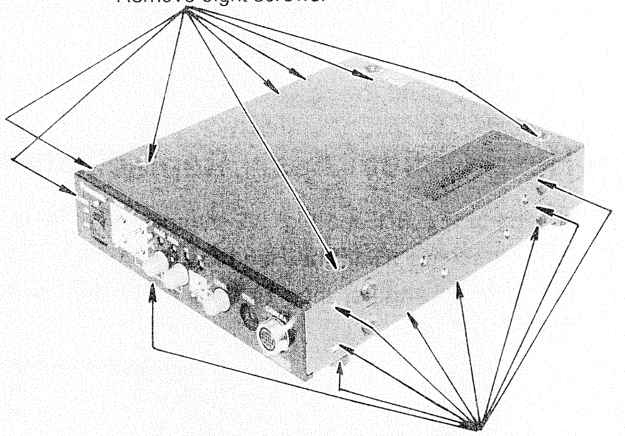


Fig. 1-2

2. Disassembling Procedure for Adjustment

- Referring to Fig. 2-1, remove sixteen screws fixing the Upper Cover and the Bottom Cover of the Camera Control Unit, then remove the Upper Cover and the Bottom Cover.

Remove eight screws.



Remove eight screws.

Fig. 2-1

- Referring to Fig. 2-2, remove three screws fixing the Power Board and remove the Power Board Ass'y.

Remove three screws.

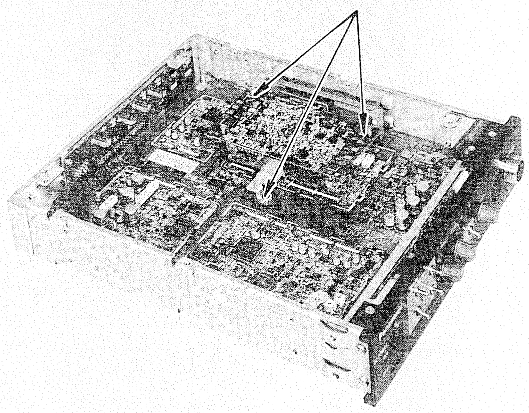


Fig. 2-2

- Referring to Fig. 2-3, remove four screws fixing the Rear Panel, disconnect the connectors CN9 and CN10 from the Main Board, then remove six screws fixing the Main Board and remove the Main Board.

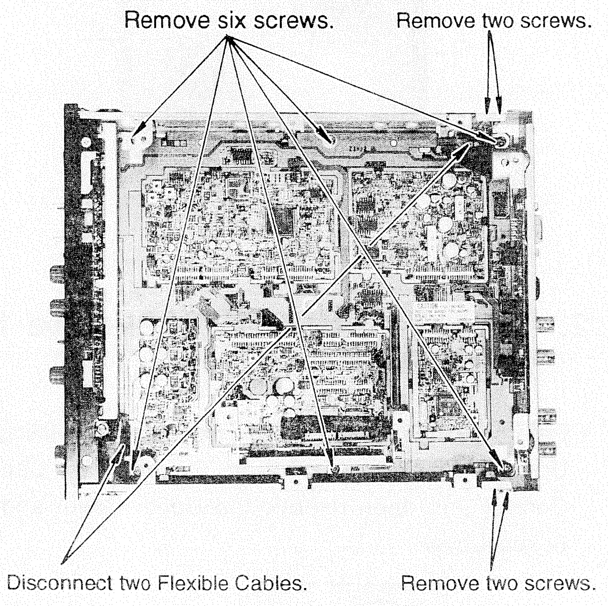

Remove six screws.
Remove two screws.
Disconnect two Flexible Cables.
Remove two screws.

Fig. 2-3

3. Head Optical Ass'y Replacement

- Referring to Fig. 3-1 and Fig. 3-2, remove one Lock Nut and eight screws fixing the Head Optical Ass'y, Covers and Mounting Angles, then remove the Head Optical Ass'y.

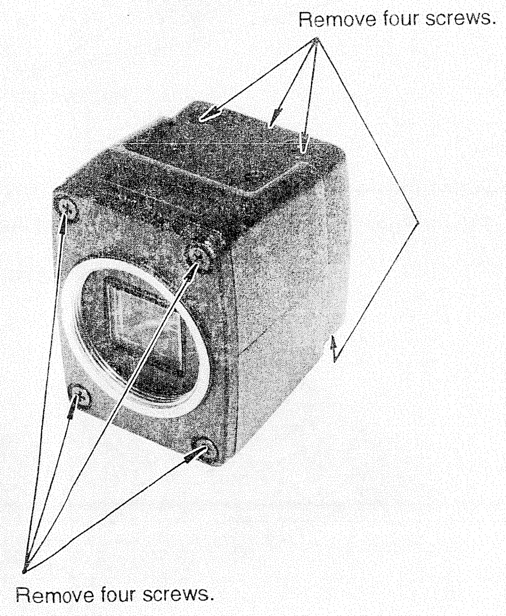

Remove four screws.
Remove four screws.

Fig. 3-1

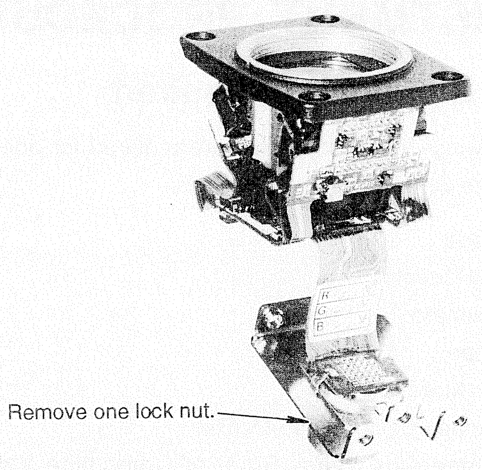

Remove one lock nut.
R
G
B

Fig. 3-2

4. Connection and Setting Up for Adjustment

4.1. Connection

- Fig. 4-1 shows the connecting diagram for the adjustment procedure.

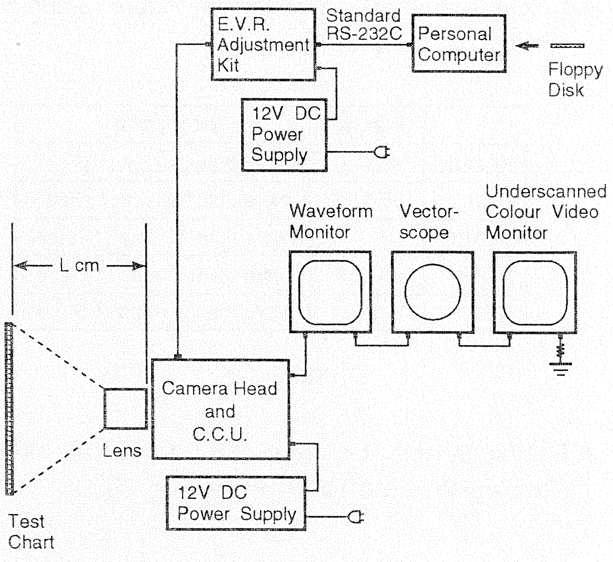

E.V.R. Adjustment Kit
Standard RS-232C
Personal Computer
Floppy Disk
12V DC Power Supply
Waveform Monitor
Vector-scope
Underscanned Colour Video Monitor
L cm
Camera Head and C.C.U.
Lens
Test Chart
12V DC Power Supply

Fig. 4-1

- Connect the Underscanned Colour Video Monitor to the Video Output Connector 1 on the Rear Panel of the Camera Control Unit of the GP-US502E through the Waveform Monitor and the Vectorscope using the coaxial cables.
- Terminate the input terminal of the Underscanned Colour Video Monitor with 75Ω.
- Connect the Camera Head of the GP-US502E to the Camera Connector on the Front Panel of the Camera Control Unit using the Camera Cable GP-CA63.

- Connect the E.V.R. Adjustment Kit to CN5 on the Process Circuit Section of the Main Board of the Camera Control Unit using supplied extension cable.
- Connect the Personal Computer to the E.V.R. Adjustment Kit using the standard straight RS-232C cable.
- Connect the 12V DC Power Supply Unit to the 12V DC Input Connector on the Rear Panel of the Camera Control Unit.
- Connect the 12V DC Power Supply Unit to the 12V DC Input Connector of the E.V.R. Adjustment Kit.
- Connect prove of the Oscilloscope, Frequency Counter and Digital Voltmeter to desired Test Point in each adjustment step.

4.2. Initial Position of the Switches and Level Controls for Adjustment

- An initial setting of the Switches and Level Controls on the Front Panel of the Camera Control Unit for this adjustment procedure are as follows:

  Automatic/Manual Gain Selection Switch: OFF
  Camera/Colour Bar Selection Switch: Colour Bar
  Auto White Balance/Auto Black Balance Set Switch: HOLD
  White Balance Selection Switch: MANU
  Electronic Light Control ON/OFF Switch: OFF
  Red Gain Control: Mechanical Center Position
  Blue Gain Control: Mechanical Center Position
  Electronic Shutter Speed Control: Mechanical Center Position

- The adjustment should be done with this initial setting, unless otherwise specified.

4.3. Setting Up for Standard Picture

- Mount the Manual Iris Lens on the Camera Head.
- Set the Logarithmic Gray Scale Chart.
- Incident light intensity of 1,400 ± 50 lux on the Logarithmic Gray Scale Chart.
- Aim the Camera at the Logarithmic Gray Scale Chart.
- Set the Camera so that the Logarithmic Gray Scale Chart becomes full picture on the Underscanned Colour Video monitor.
- Set the Camera/Color Bar Selection Switch to Camera position.
- Connect the Oscilloscope to pin 2 (TP2G) of CN6 on the Process Circuit Section of the Main Board.
- Turn the Lens Focus to obtain correct focal point.
- Set the Lens Iris so that the peak level of the gray scale from the blanking level becomes 280 ± 10 mVp-p.

5. Adjustment Procedure

- Refer to the Location of the Test Points and Adjustin Controls on page 73.

■ Adjustment Procedure - 1

(1) 3.5V Adjustment

Test Point:	**TD30 (3.5V)**	**Power Board**
Adjust:	**VR1 (3.5V)**	**Power Board**

- Connect the Digital Voltmeter to TD30.
- Adjust VR1 to obtain 3.5 ± 0.05V.

(2) 5.0V Adjustment

Test Point:	**TD31 (5.0V)**	**Power Board**
Adjust:	**VR2 (5.0V)**	**Power Board**

- Connect the Digital Voltmeter to TD31.
- Adjust VR2 to obtain 5.0 ± 0.05V.

(3) 8.6V Adjustment

Test Point:	**TD10 (8.6V)**	**Power Board**
Adjust:	**VR3 (8.6V)**	**Power Board**

- Connect the Digital Voltmeter to TD10.
- Adjust VR3 to obtain 8.6 ± 0.1V.

(4) 15.7V Adjustment

Test Point:	**TD6 (15.7V)**	**Power Board**
Adjust:	**VR4 (15.7V)**	**Power Board**

- Connect the Digital Voltmeter to TD6.
- Adjust VR3 to obtain 15.7 ± 0.1V.

(5) VSUB (CCD Bias) Coarse Adjustment

Test Point:	**TP2 (Gch VSUB)**	**Sensor Boar**
	TP1 (Rch VSUB)	**Sensor Boar**
	TP3 (Bch VSUB)	**Sensor Boar**
Adjust:	**VR2 (Gch VSUB)**	**Sensor Boar**
	VR1 (Rch VSUB)	**Sensor Boar**
	VR3 (Bch VSUB)	**Sensor Boar**

- Referring to Fig. 5-1, check each VSUB voltage on th indication label of the Optical Head Ass'y.
- Connect the Digital Voltmeter to TP2.
- Adjust VR2 to obtain Gch VSUB Voltage which indicate on the label.
- Change the Digital Voltmeter to TP1.
- Adjust VR1 to obtain Rch VSUB Voltage which indicate on the label.
- Change the Digital Voltmeter to TP3.
- Adjust VR3 to obtain Bch VSUB Voltage which indicate on the label.

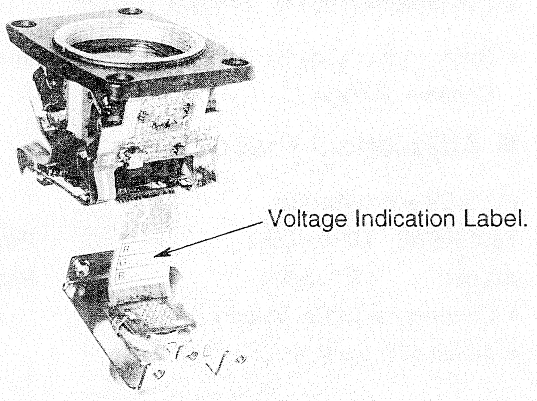


Fig. 5-1

(6) VSUB (CCD Bias) Fine Adjustment

Test Point:	**Pin 2 of CN6 (TP2G)**	**Main Board**
	Pin 4 of CN6 (TP2R)	**Main Board**
	Pin 6 of CN6 (TP2B)	**Main Board**
Adjust:	**VR2 (Gch VSUB)**	**Sensor Board**
	VR1 (Rch VSUB)	**Sensor Board**
	VR3 (Bch VSUB)	**Sensor Board**

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Set the Camera/Colour Bar Selection Switch on the Front Panel of the Camera Control Unit to Camera position.
- Connect the Oscilloscope to pin 2 of CN6 on the Process Circuit Section of the Main Board.
- Turn the Lens Iris so that the signal level at pin 2 of CN6 becomes saturated.
- Turn the Lens Iris fully open.
- Confirm that the signal levels at pin 2, pin 4 and pin 6 of CN6 extended to 1.2V as shown in Fig. 5-2.

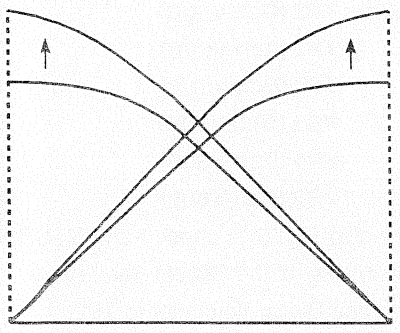


Fig. 5-2

- If not, readjust VR2, VR1 and VR3 so that the signal levels at pin 2, pin4 and pin 6 of CN6 become maximum extended voltages.

(7) G/L SYNC PLL Adjustment

Test point:	**TD8 (G/L SYNC PLL)**	**Main Board**
Adjust:	**L2 (G/L SYNC PLL)**	**Main Board**

- Supply the Composite Video Signal to the VBS/HD Connector on the Rear Panel of the Camera Control Unit.
- Connect the Digital Voltmeter to TD8 on the Sync Circuit Section of the Main Board.
- Adjust L2 to obtain 2.5 ± 0.1V.

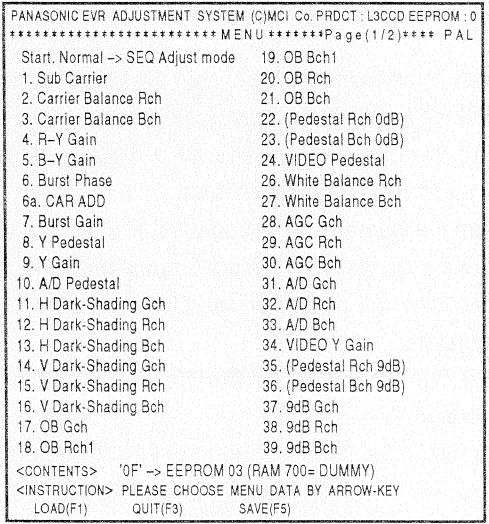
(8) Drive PLL Adjustment

Test point:	**TD6 (DRIVE PLL)**	**Main Board**
Adjust:	**L5 (DRIVE PLL)**	**Main Board**

- Connect the Digital Voltmeter to TD6 on the Drive Circuit Section of the Main Board.
- Adjust L5 to obtain 2.0 ± 0.1V.

■ Adjustment Procedure - 2 (E.V.R. Adjustment)

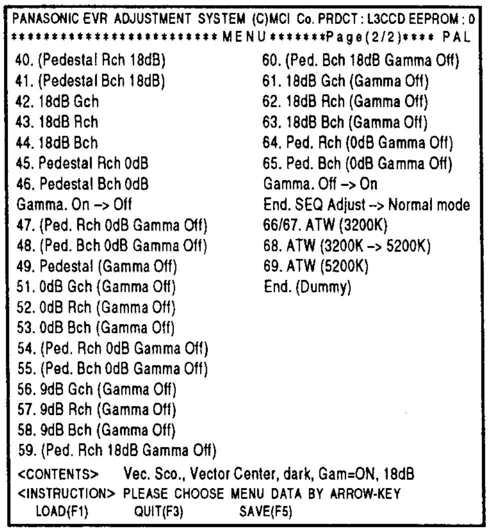
- Connect the E.V.R. Adjustment Kit to CN5 on the Process Circuit Section of the Main Board using extension cable supplied.
- Connect E.V.R. Adjustment Kit to IBM-PC (Personal Computer) using standard straight RS-232C cable.
- Insert new disk containing DOS Operating System and E.V.R. Adjustment Program into IBM-PC and turns on power switch of IBM-PC.
- At the prompt, type **ADJ2E US502E** and press the **ENTER** key, an initial menu page (1/2) for adjustment as shown in Table 5-2 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
************************* M E N U *******P a g e ( 1 / 2 )**** P A L
 Start. Normal -> SEQ Adjust mode     19. OB Bch1
  1. Sub Carrier                      20. OB Rch
  2. Carrier Balance Rch              21. OB Bch
  3. Carrier Balance Bch              22. (Pedestal Rch 0dB)
  4. R-Y Gain                         23. (Pedestal Bch 0dB)
  5. B-Y Gain                         24. VIDEO Pedestal
  6. Burst Phase                      26. White Balance Rch
  6a. CAR ADD                         27. White Balance Bch
  7. Burst Gain                       28. AGC Gch
  8. Y Pedestal                       29. AGC Rch
  9. Y Gain                           30. AGC Bch
 10. A/D Pedestal                     31. A/D Gch
 11. H Dark-Shading Gch               32. A/D Rch
 12. H Dark-Shading Rch               33. A/D Bch
 13. H Dark-Shading Bch               34. VIDEO Y Gain
 14. V Dark-Shading Gch               35. (Pedestal Rch 9dB)
 15. V Dark-Shading Rch               36. (Pedestal Bch 9dB)
 16. V Dark-Shading Bch               37. 9dB Gch
 17. OB Gch                           38. 9dB Rch
 18. OB Rch1                          39. 9dB Bch
 <CONTENTS>    '0F' -> EEPROM 03 (RAM 700= DUMMY)
 <INSTRUCTION> PLEASE CHOOSE MENU DATA BY ARROW-KEY
   LOAD(F1)        QUIT(F3)          SAVE(F5)
```

Table 5-2

- Press the **PAGE UP** key, an initial menu page (2/2) for adjustment as shown in Table 5-3 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
************************** MENU *******Page(2/2)**** PAL
40. (Pedestal Rch 18dB)           60. (Ped. Bch 18dB Gamma Off)
41. (Pedestal Bch 18dB)           61. 18dB Gch (Gamma Off)
42. 18dB Gch                      62. 18dB Rch (Gamma Off)
43. 18dB Rch                      63. 18dB Bch (Gamma Off)
44. 18dB Bch                      64. Ped. Rch (0dB Gamma Off)
45. Pedestal Rch 0dB              65. Ped. Bch (0dB Gamma Off)
46. Pedestal Bch 0dB              Gamma. Off -> On
Gamma. On -> Off                  End. SEQ Adjust -> Normal mode
47. (Ped. Rch 0dB Gamma Off)      66/67. ATW (3200K)
48. (Ped. Bch 0dB Gamma Off)      68. ATW (3200K -> 5200K)
49. Pedestal (Gamma Off)          69. ATW (5200K)
51. 0dB Gch (Gamma Off)           End. (Dummy)
52. 0dB Rch (Gamma Off)
53. 0dB Bch (Gamma Off)
54. (Ped. Rch 0dB Gamma Off)
55. (Ped. Bch 0dB Gamma Off)
56. 9dB Gch (Gamma Off)
57. 9dB Rch (Gamma Off)
58. 9dB Bch (Gamma Off)
59. (Ped. Rch 18dB Gamma Off)
<CONTENTS>     Vec. Sco., Vector Center, dark, Gam=ON, 18dB
<INSTRUCTION> PLEASE CHOOSE MENU DATA BY ARROW-KEY
   LOAD(F1)      QUIT(F3)       SAVE(F5)
```

Table 5-3

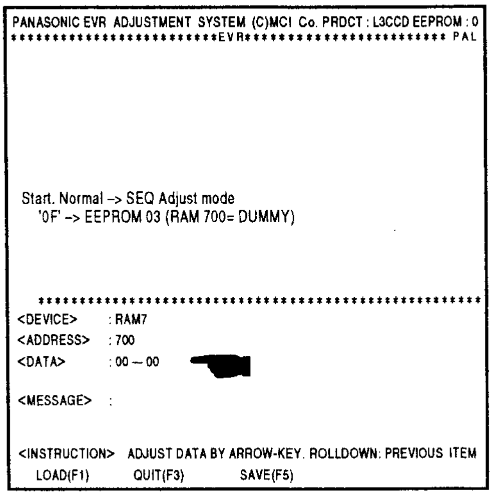
- Press the **SAVE (F5)** key. Then computer will ask you for the file name.
- Give appropriate file name to the computer. But do not use **US502E.EVR** for your file name. This saving procedure is recommended to keep the current status of the camera.
- Press the **LOAD (F1)** key and type **US502E.EVR** (if using GP-US502E), and press the **ENTER** key for presetting adjustment of the camera.

Note:

- **EEPROM** mentioned in this adjustment procedure is IC505 on the Process Circuit Section of the Main Board.
- **RAM** mentioned in this adjustment procedure is internal RAM of IC507 on the Process Circuit Section of the Main Board.

■ Setting for SEQ Adjustment mode

- Select the **Start. Normal -> SEQ Adjust mode** in the **MENU Page (1/2)**, then press the **ENTER** key, the menu as shown in Table 5-4 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
***************************EVR**************************** PAL




 Start. Normal -> SEQ Adjust mode
   '0F' -> EEPROM 03 (RAM 700= DUMMY)



   *******************************************************
<DEVICE>     : RAM7
<ADDRESS>    : 700
<DATA>       : 00 -- 00

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-4

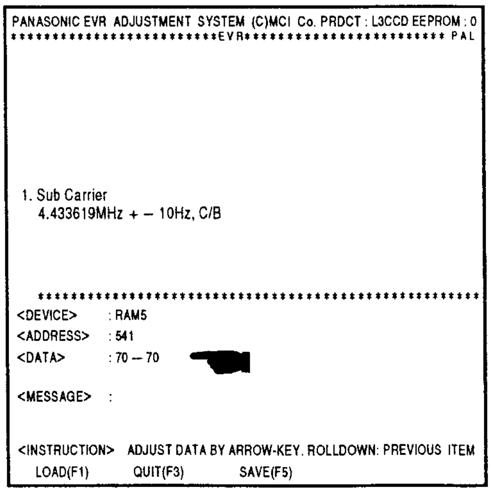
- Press the **ENTER** key.

(1) Subcarrier Frequency Adjustment

Test Point: **TD2 (A4FSC)** **Main Board**

Adjust: **RAM5 (543)** **Main Board**

- The menu as shown in Table 5-5 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
***************************EVR**************************** PAL




 1. Sub Carrier
   4.433619MHz + - 10Hz, C/B



   *******************************************************
<DEVICE>     : RAM5
<ADDRESS>    : 541
<DATA>       : 70 -- 70

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-5

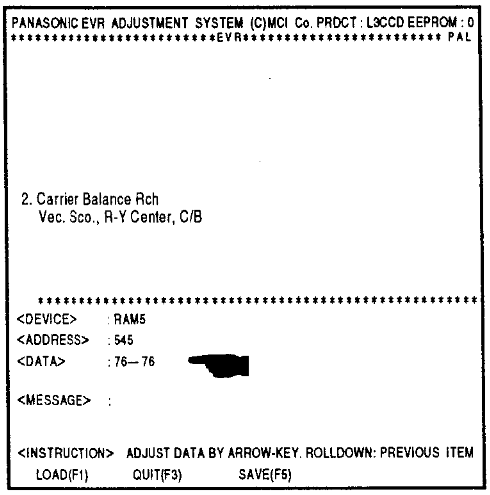
- Connect the Digital Voltmeter to TD2 on the Sync Circuit Section of the Main Board.
- Adjust data with the **ARROW** keys so that the voltage at TD2 becomes 1.8 ± 0.1 V.
- Press the **ENTER** key for next adjustment.

(2) Rch Carrier Balance Adjustment

Test Point: Video Out Connector 1 **Rear Panel**

Adjust: RAM5 (545) **Main Board**

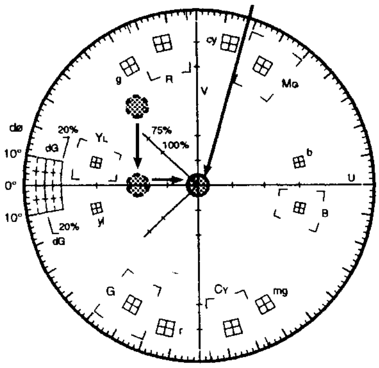
- The menu as shown in Table 5-6 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************ PAL

2. Carrier Balance Rch
   Vec. Sco., R-Y Center, C/B

****************************************************
<DEVICE>     : RAM5
<ADDRESS>    : 545
<DATA>       : 76— 76

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)      QUIT(F3)       SAVE(F5)
```

Table 5-6

- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the Rch Carrier vector positions at center of the Vectorscope as shown in Fig. 5-3.



Positioned at center.

Fig. 5-3

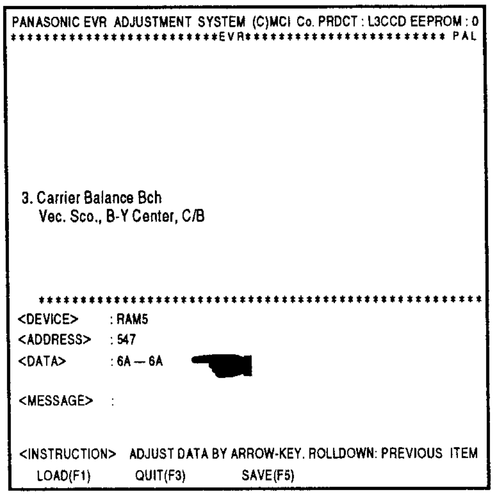
- Press the **ENTER** key for next adjustment.

(3) Bch Carrier Balance Adjustment

Test Point: Video Out Connector 1 **Rear Panel**

Adjust: RAM5 (547) **Main Board**

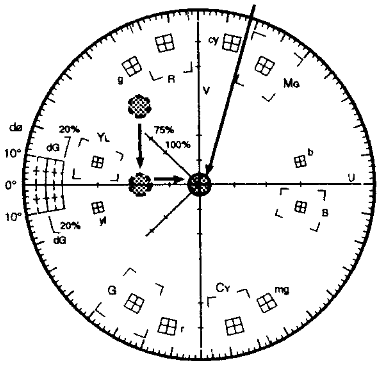
- The menu as shown in Table 5-7 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************ PAL

3. Carrier Balance Bch
   Vec. Sco., B-Y Center, C/B

****************************************************
<DEVICE>     : RAM5
<ADDRESS>    : 547
<DATA>       : 6A — 6A

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)      QUIT(F3)       SAVE(F5)
```

Table 5-7

- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the Bch Carrier vector positions at center of the Vectorscope as shown in Fig. 5-4.



Positioned at center.

Fig. 5-4

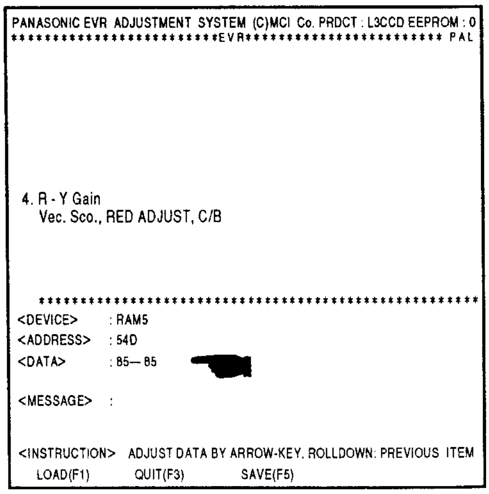
- Press the **ENTER** key for next adjustment.

(4) R-Y Gain Adjustment

Test Point: Video Out Connector 1 **Rear Panel**

Adjust: RAM5 (54D) **Main Board**

- The menu as shown in Table 5-8 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************ PAL

4. R - Y Gain
   Vec. Sco., RED ADJUST, C/B

****************************************************
<DEVICE>     : RAM5
<ADDRESS>    : 54D
<DATA>       : 85— 85

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)      QUIT(F3)       SAVE(F5)
```

Table 5-8

- Adjust data with the **ARROW** keys so that the R, Mg, G and Cy vectors position at their correct positions on the Vectorscope as shown in Fig. 5-5.

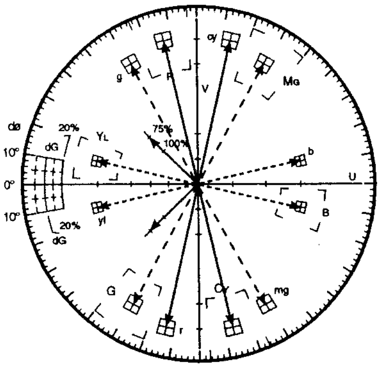


Fig. 5-5

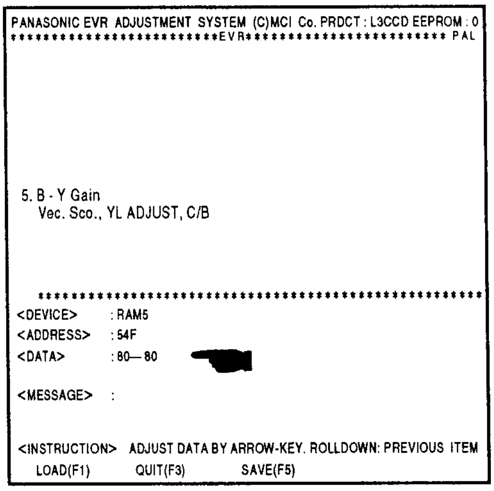
- Press the **ENTER** key for next adjustment.

(5) B-Y Gain Adjustment

Test Point: Video Out Connector 1 **Rear Panel**

Adjust: RAM5 (54F) **Main Board**

- The menu as shown in Table 5-9 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL

5. B - Y Gain
   Vec. Sco., YL ADJUST, C/B

*****************************************************
<DEVICE>     : RAM5
<ADDRESS>    : 54F
<DATA>       : 80— 80

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)        QUIT(F3)          SAVE(F5)
```

Table 5-9

- Adjust data with the **ARROW** keys so that the YL and B vectors position at their correct positions on the Vectorscope as shown in Fig. 5-6.

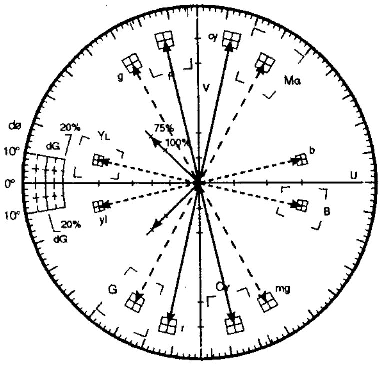


Fig. 5-6

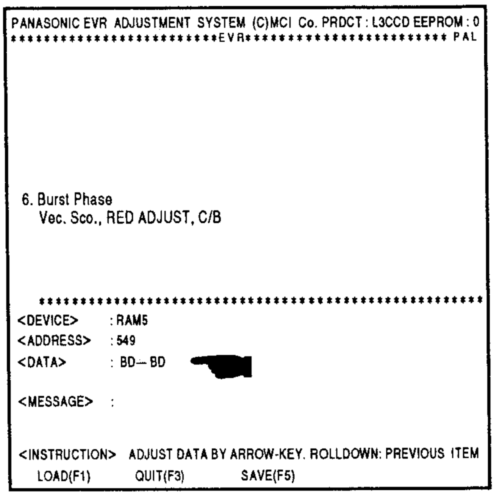
- Press the **ENTER** key for next adjustment.

(6) Burst Phase Adjustment

Test Point: Video Out Connector 1 **Rear Panel**

Adjust: RAM5 (549) **Main Board**

- The menu as shown in Table 5-10 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL

6. Burst Phase
   Vec. Sco., RED ADJUST, C/B

*****************************************************
<DEVICE>     : RAM5
<ADDRESS>    : 549
<DATA>       : BD— BD

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)        QUIT(F3)          SAVE(F5)
```

Table 5-10

- Adjust data with the **ARROW** keys so that the Red Burst Phase becomes 104 ± 1° as shown in Fig. 5-7.

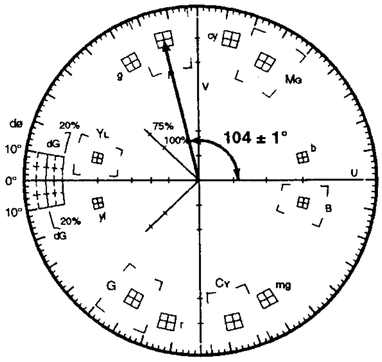


Fig. 5-7

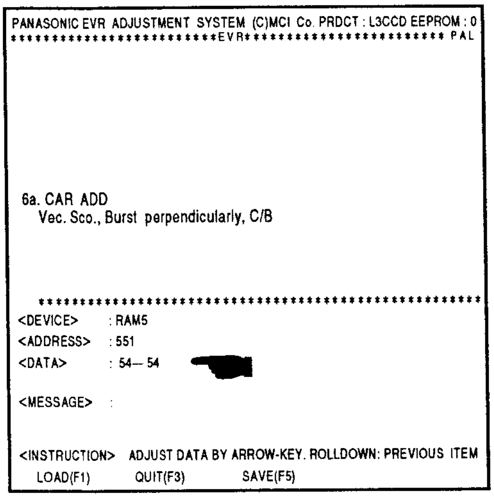
- Repeat adjustment steps (4) to (6) so the each vector positions in its correct area.
- Press the **ENTER** key for next adjustment.

(6)-a Carrier Add Adjustment

Test Point: Video Out Connector 1 **Rear Panel**

Adjust: RAM5 (551) **Main Board**

- The menu as shown in Table 5-11 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL

6a. CAR ADD
   Vec. Sco., Burst perpendicularly, C/B

******************************************************
<DEVICE>     : RAM5
<ADDRESS>    : 551
<DATA>       : 54— 54

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 5-11

- Set the Mode Switch of the Vectorscope to the "NTSC" mode.
- Adjust data with the **ARROW** keys so that the Red Burst Phase becomes 135 ± 1° as shown in Fig. 5-8.
- Change the Mode Switch of the Vectorscope to the "PAL" mode.
- Confirm the phase difference in between Bursts should be within 90 ± 2° as shown in Fig. 5-9.

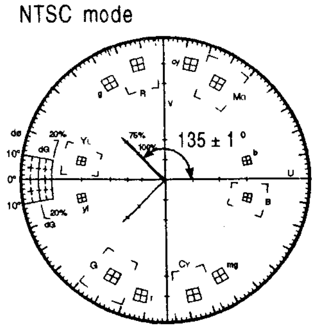


Fig. 5-8

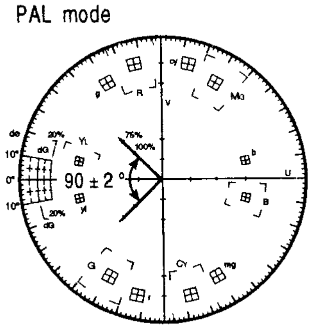


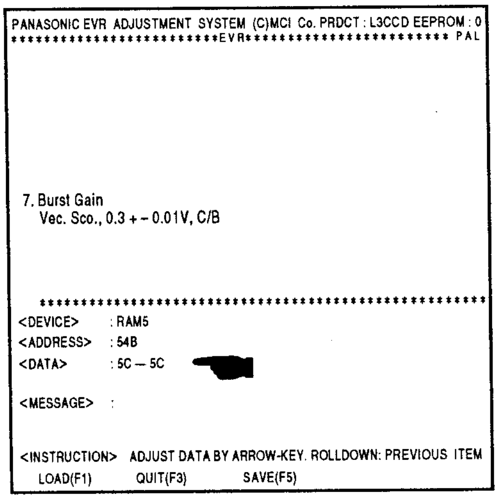
Fig. 5-9

(7) Burst Gain Adjustment

Test Point: Video Out Connector 1 Rear Panel

Adjust: RAM5 (54B) Main Board

- The menu as shown in Table 5-12 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL

7. Burst Gain
   Vec. Sco., 0.3 + - 0.01V, C/B

******************************************************
<DEVICE>     : RAM5
<ADDRESS>    : 54B
<DATA>       : 5C — 5C

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 5-12

- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector 1.
- Adjust data with the **ARROW** keys so that the Burst Level becomes 300 ± 10 mVp-p as shown in Fig. 5-10.

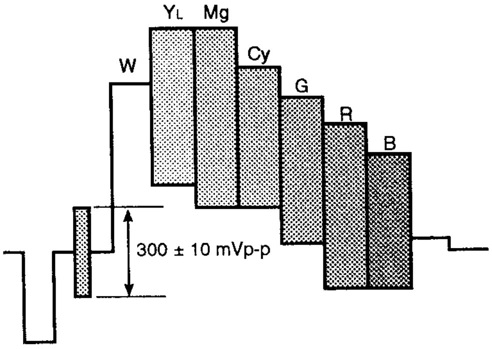


Fig. 5-10

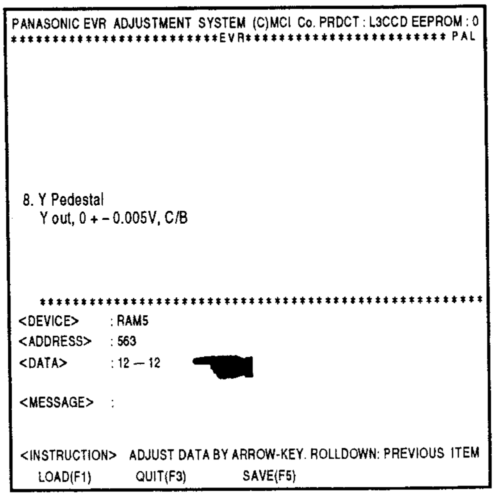
- Press the **ENTER** key for next adjustment.

(8) Y Pedestal Adjustment

Test Point: Video Out Connector 1 Rear Panel

Adjust: RAM5 (563) Main Board

- The menu as shown in Table 5-13 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL

8. Y Pedestal
   Y out, 0 + - 0.005V, C/B

******************************************************
<DEVICE>     : RAM5
<ADDRESS>    : 563
<DATA>       : 12 — 12

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 5-13

- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector 1.
- Adjust data with the **ARROW** keys so that the Pedestal Level becomes 0 ± 5 mVp-p as shown in Fig. 5-10.

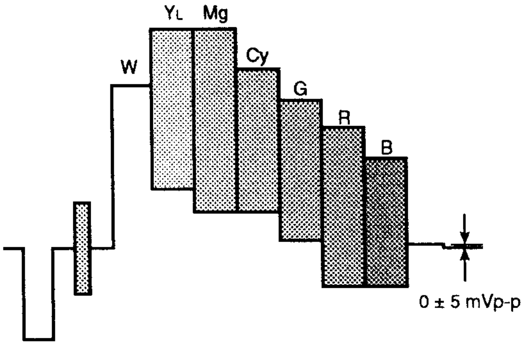


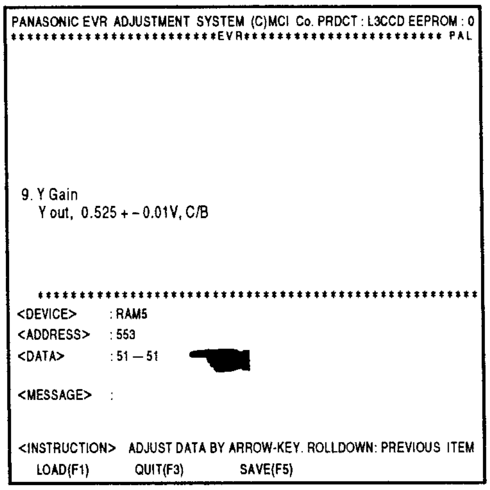
Fig. 5-11

- Press the **ENTER** key for next adjustment.

(9) Y Gain Adjustment

Test Point: **Video Out Connector 1** **Rear Panel**
Adjust: **RAM5 (553)** **Main Board**

- The menu as shown in Table 5-14 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL

9. Y Gain
   Y out,  0.525 + - 0.01V, C/B

*****************************************************
<DEVICE>      : RAM5
<ADDRESS>     : 553
<DATA>        : 51 — 51

<MESSAGE>     :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 5-14

- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector 1.
- Adjust data with the **ARROW** keys so that the Y Level of White Signal becomes 525 ± 10 mVp-p as shown in Fig. 5-12.

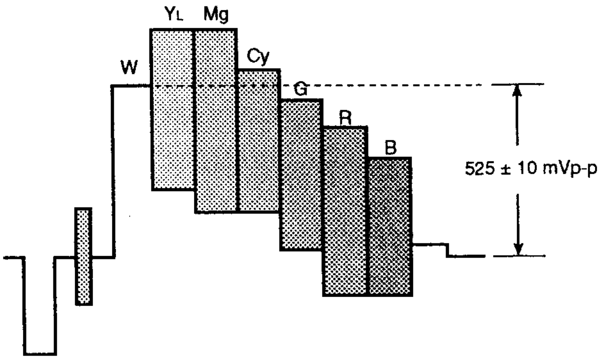


Fig. 5-12

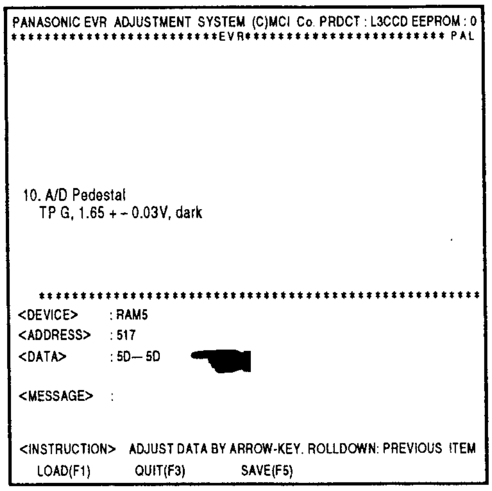
- Press the **ENTER** key for next adjustment.

■ Before start to adjust following steps, set the Camera/Colour Bar Selection Switch on the Front Panel of the Camera Control Unit to Camera side.

(10) A/D Pedestal Adjustment

Test Point: **Pin 7 of CN6 (TPG)** **Main Board**
Adjust: **RAM5 (517)** **Main Board**

- The menu as shown in Table 5-15 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL

10. A/D Pedestal
    TP G, 1.65 + - 0.03V, dark

*****************************************************
<DEVICE>      : RAM5
<ADDRESS>     : 517
<DATA>        : 5D— 5D

<MESSAGE>     :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 5-15

- Cap on the Lens.
- Connect the Oscilloscope to pin 7 of CN6 on the Process Circuit Section of the Main Board.
- Adjust data with the **ARROW** keys so that the A/D Pedestal Level becomes 1.65 ± 0.03 V as shown in Fig. 5-13.

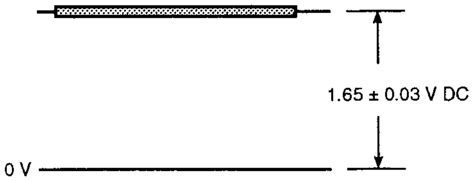


Fig. 5-13

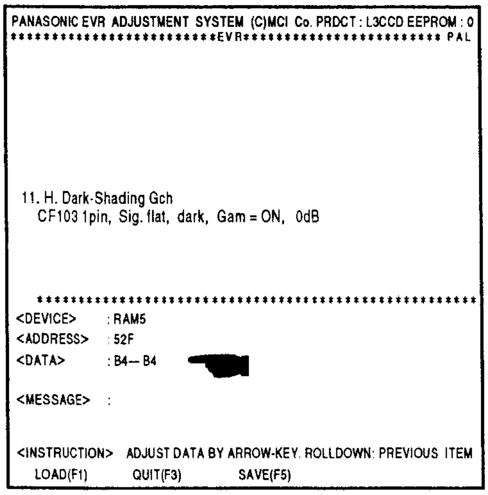
- Press the **ENTER** key for next adjustment.

(11) Gch H Dark-Shading Adjustment

Test Point: Pin 1 of CF103 Main Board

Adjust: RAM5 (52F) Main Board

- The menu as shown in Table 5-16 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

 11. H. Dark-Shading Gch
   CF103 1pin, Sig. flat, dark, Gam = ON,  0dB

****************************************************
<DEVICE>     : RAM5
<ADDRESS>    : 52F
<DATA>       : B4— B4

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)         SAVE(F5)
```

Table 5-16

- Set the Automatic/Manual Gain Selection Switch to HIGH position.
- Cap on the Lens.
- Connect the Oscilloscope to pin 1 of CF103 on the Process Circuit Section of the Main Board.
- Adjust data with the **ARROW** keys so that the Signal section becomes flat against the BLK signal as shown in Fig. 5-14.

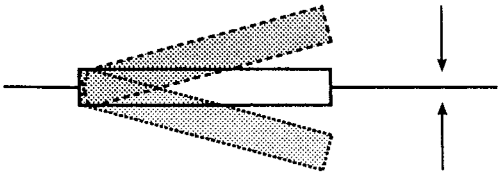


Fig. 5-14

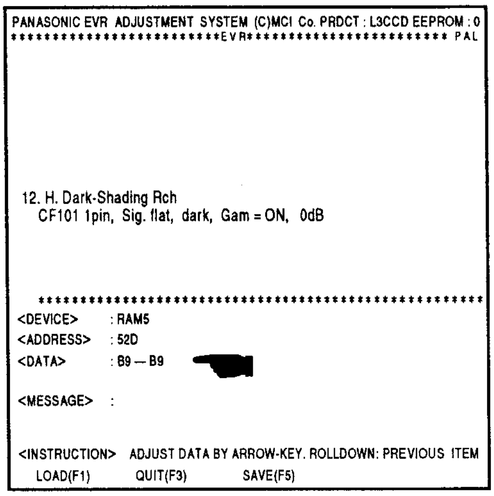
- Press the **ENTER** key for next adjustment.

(12) Rch H Dark-Shading Adjustment

Test Point: Pin 1 of CF101 Main Board

Adjust: RAM5 (52D) Main Board

- The menu as shown in Table 5-17 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

 12. H. Dark-Shading Rch
   CF101 1pin, Sig. flat, dark, Gam = ON,  0dB

****************************************************
<DEVICE>     : RAM5
<ADDRESS>    : 52D
<DATA>       : B9 — B9

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)         SAVE(F5)
```

Table 5-17

- Cap on the Lens.
- Connect the Oscilloscope to pin 1 of CF101 on the Process Circuit Section of the Main Board.
- Adjust data with the **ARROW** keys so that the Signal section becomes flat against the BLK signal as shown in Fig. 5-15.

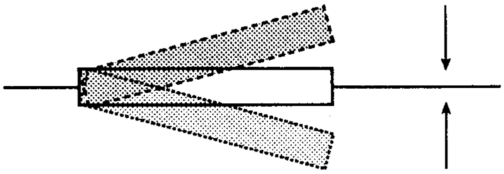


Fig. 5-15

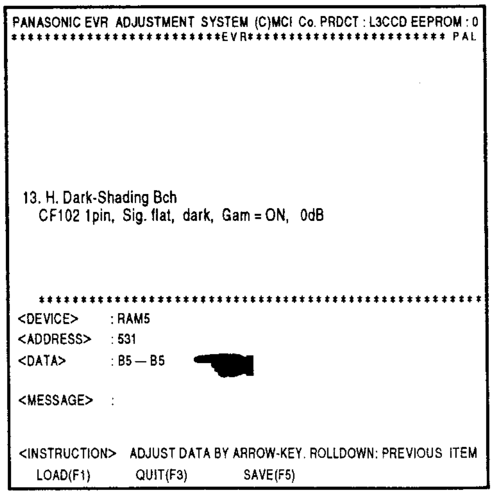
- Press the **ENTER** key for next adjustment.

(13) Bch H Dark-Shading Adjustment

Test Point: Pin 1 of CF102 Main Board

Adjust: RAM5 (531) Main Board

- The menu as shown in Table 5-18 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

 13. H. Dark-Shading Bch
   CF102 1pin, Sig. flat, dark, Gam = ON,  0dB

****************************************************
<DEVICE>     : RAM5
<ADDRESS>    : 531
<DATA>       : B5 — B5

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)         SAVE(F5)
```

Table 5-18

- Cap on the Lens.
- Connect the Oscilloscope to pin 1 of CF102 on the Process Circuit Section of the Main Board.
- Adjust data with the **ARROW** keys so that the Signal section becomes flat against the BLK signal as shown in Fig. 5-16.

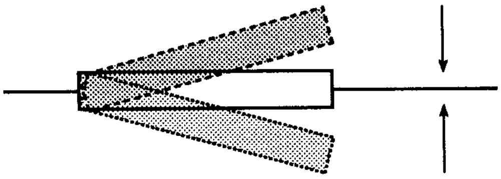


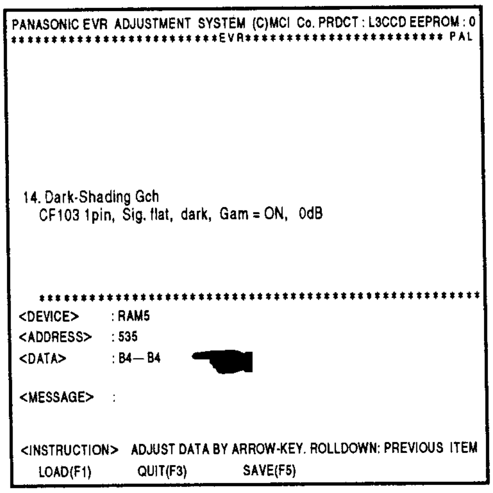
Fig. 5-16

- Press the **ENTER** key for next adjustment.

(14) Gch V Dark-Shading Adjustment

Test Point: **Pin 1 of CF103** **Main Board**
Adjust: **RAM5 (535)** **Main Board**

- The menu as shown in Table 5-19 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL

14. Dark-Shading Gch
   CF103 1pin, Sig. flat, dark, Gam = ON, 0dB

****************************************************
<DEVICE>     : RAM5
<ADDRESS>    : 535
<DATA>       : B4— B4

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-19

- Cap on the Lens.
- Connect the Oscilloscope to pin 1 of CF103 on the Process Circuit Section of the Main Board.
- Adjust data with the **ARROW** keys so that the Signal section becomes flat against the BLK signal as shown in Fig. 5-17.

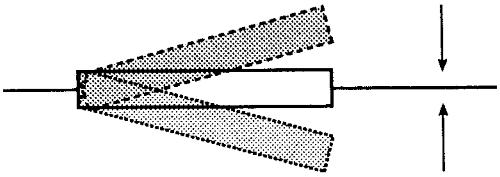


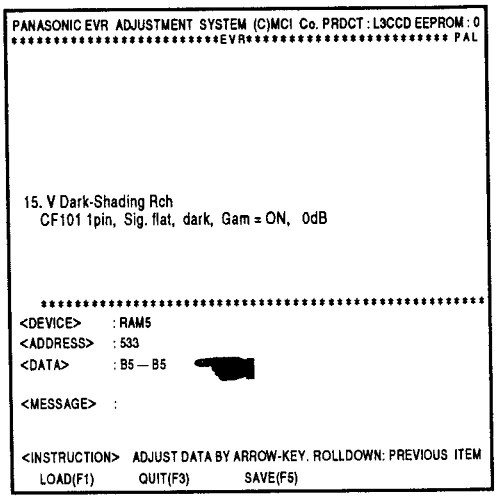
Fig. 5-17

- Press the **ENTER** key for next adjustment.

(15) Rch V Dark-Shading Adjustment

Test Point: **Pin 1 of CF101** **Main Board**
Adjust: **RAM5 (533)** **Main Board**

- The menu as shown in Table 5-20 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL

15. V Dark-Shading Rch
   CF101 1pin, Sig. flat, dark, Gam = ON, 0dB

****************************************************
<DEVICE>     : RAM5
<ADDRESS>    : 533
<DATA>       : B5 — B5

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-20

- Cap on the Lens.
- Connect the Oscilloscope to pin 1 of CF101 on the Process Circuit Section of the Main Board.
- Adjust data with the ARROW keys so that the Signal section becomes flat against the BLK signal as shown in Fig. 5-18.

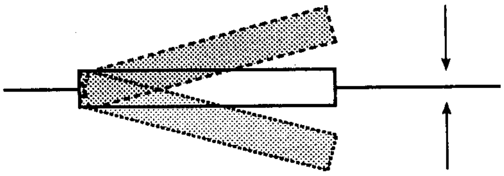


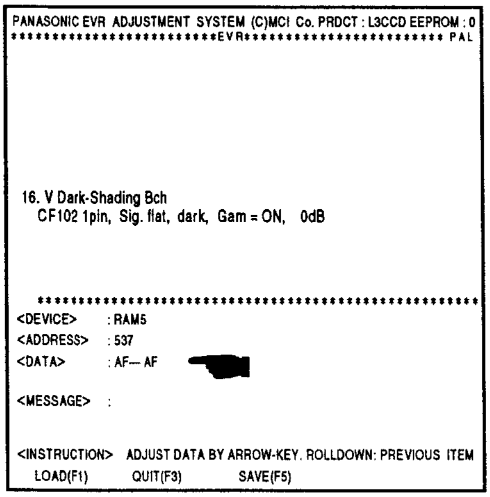
Fig. 5-18

- Press the **ENTER** key for next adjustment.

(16) Bch V Dark-Shading Adjustment

Test Point: **Pin 1 of CF102** **Main Board**
Adjust: **RAM5 (537)** **Main Board**

- The menu as shown in Table 5-21 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL



16. V Dark-Shading Bch
   CF102 1pin, Sig. flat, dark, Gam = ON,   0dB


   *****************************************************
<DEVICE>     : RAM5
<ADDRESS>    : 537
<DATA>       : AF— AF

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-21

- Cap on the Lens.
- Connect the Oscilloscope to pin 1 of CF102 on the Process Circuit Section of the Main Board.
- Adjust data with the **ARROW** keys so that the Signal section becomes flat against the BLK signal as shown in Fig. 5-19.

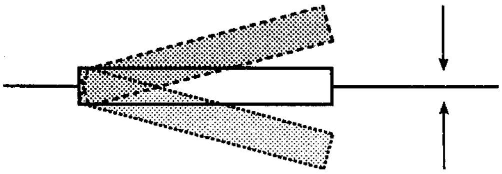


Fig. 5-19

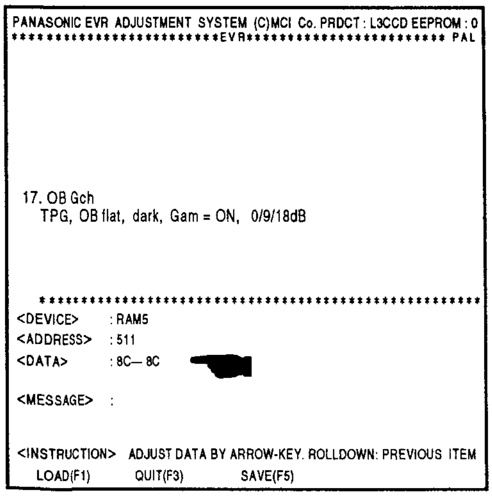
- Press the **ENTER** key for next adjustment.

(17) OB Gch Adjustment

Test Point: **Pin 7 of CN6 (TPG)** **Main Board**

Adjust: **RAM5 (511)** **Main Board**

- The menu as shown in Table 5-22 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL



17. OB Gch
   TPG, OB flat, dark, Gam = ON,  0/9/18dB


   *****************************************************
<DEVICE>     : RAM5
<ADDRESS>    : 511
<DATA>       : 8C— 8C

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-22

- Set the Automatic/Manual Gain Selection Switch to OFF position.
- Cap on the Lens.
- Connect the Oscilloscope to pin 7 of CN6 on the Process Circuit Section of the Main Board.
- Adjust data with the **ARROW** keys so that the Signal section becomes flat against the BLK signal as shown in Fig. 5-20.
- Set the Automatic/Manual Gain Selection Switch to HIGH position.
- Confirm that the Signal section becomes flat against the BLK signal.
- If not, readjust data by the **ARROW** keys so that the Signal section becomes flat against the BLK signal as shown in Fig. 5-20.
- Set the Automatic/Manual Gain Selection Switch to OFF position again, confirm that the Signal section becomes flat against the BLK signal.
- If not, repeat adjustment in between OFF and HIGH positions until satisfied.

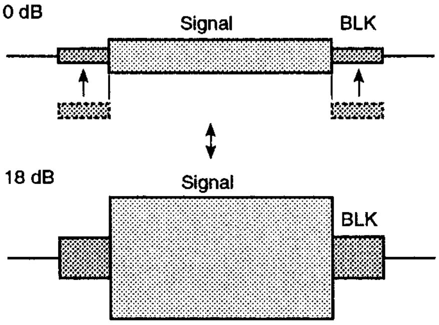


Fig. 5-20

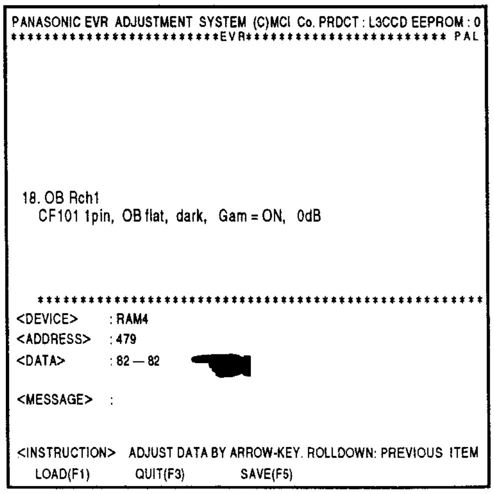
- Press the **ENTER** key for next adjustment.

(18) OB Rch1 Adjustment

Test Point: **Pin 1 of CF101** **Main Board**

Adjust: **RAM4 (479)** **Main Board**

- The menu as shown in Table 5-23 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL



18. OB Rch1
   CF101 1pin, OB flat, dark, Gam = ON,  0dB


   *****************************************************
<DEVICE>     : RAM4
<ADDRESS>    : 479
<DATA>       : 82 — 82

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-23

- Set the Automatic/Manual Gain Selection Switch to OFF position.
- Cap on the Lens.
- Connect the Oscilloscope to pin 1 of CF101 on the Process Circuit Section of the Main Board.
- Adjust data with the **ARROW** keys so that the BLK1 becomes flat against the BLK2 signal as shown in Fig. 5-21.

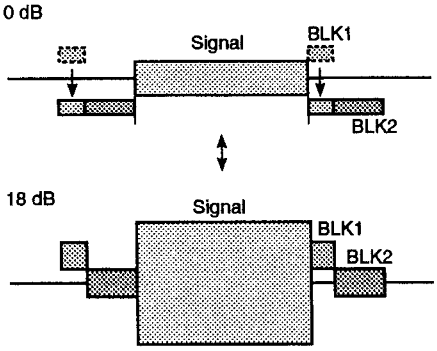


Fig. 5-21

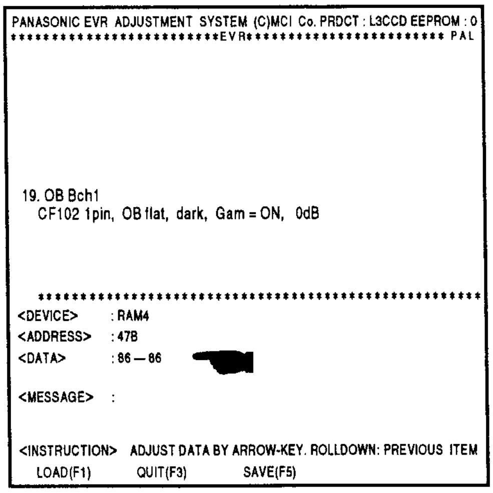
- Press the **ENTER** key for next adjustment.

(19) OB Bch1 Adjustment

Test Point: **Pin 1 of CF102** **Main Board**

Adjust: **RAM4 (47B)** **Main Board**

- The menu as shown in Table 5-24 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL



 19. OB Bch1
   CF102 1pin, OB flat, dark, Gam = ON,  0dB



   ****************************************************
<DEVICE>      : RAM4
<ADDRESS>     : 47B
<DATA>        : 86 — 86

<MESSAGE>     :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-24

- Cap on the Lens.
- Connect the Oscilloscope to pin 1 of CF102 on the Process Circuit Section of the Main Board.
- Adjust data with the **ARROW** keys so that the BLK1 becomes flat against the BLK2 signal as shown in Fig. 5-22.

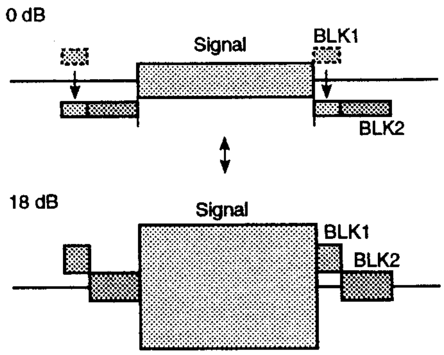


Fig. 5-22

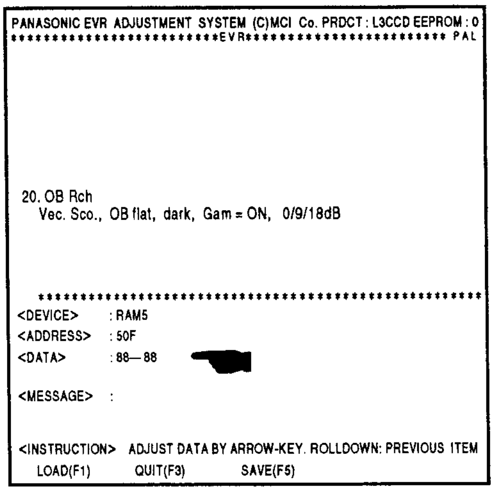
- Press the **ENTER** key for next adjustment.

(20) OB Rch Adjustment

Test Point: **Pin 1 of CF101** **Main Board**

Adjust: **RAM5 (50F)** **Main Board**

- The menu as shown in Table 5-25 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL



 20. OB Rch
   Vec. Sco., OB flat, dark, Gam = ON,  0/9/18dB



   ****************************************************
<DEVICE>      : RAM5
<ADDRESS>     : 50F
<DATA>        : 88— 88

<MESSAGE>     :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-25

- Cap on the Lens.
- Connect the Oscilloscope to pin 1 of CF101 on the Process Circuit Section of the Main Board.
- Adjust data with the ARROW keys so that the Signal section becomes flat against the BLK2 signal as shown in Fig. 5-23.
- Set the Automatic/Manual Gain Selection Switch to HIGH position.
- Confirm that the center of the Signal section and BLK2 signal becomes coincided.
- If not, readjust data with the ARROW keys so that the Signal section becomes flat against the BLK2 signal as shown in Fig. 5-23.

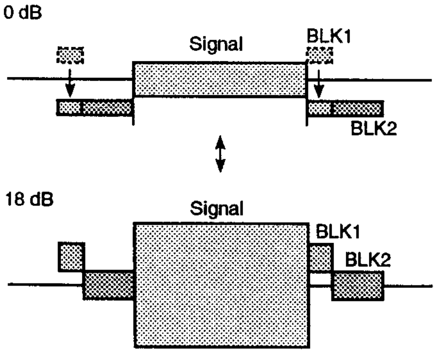


Fig. 5-23

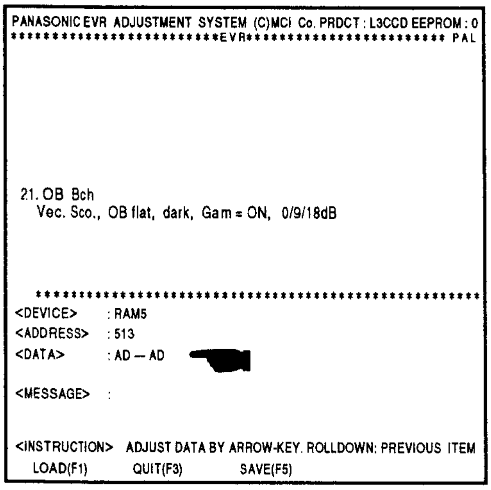
- Press the **ENTER** key for next adjustment.

(21) OB Bch Adjustment

Test Point: Pin 1 of CF102 Main Board

Adjust: RAM5 (513) Main Board

- The menu as shown in Table 5-26 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL

 21. OB Bch
   Vec. Sco., OB flat, dark, Gam = ON,  0/9/18dB

   *****************************************************
<DEVICE>      : RAM5
<ADDRESS>     : 513
<DATA>        : AD — AD

<MESSAGE>     :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-26

- Set the Automatic/Manual Gain Selection Switch to OFF position.
- Cap on the Lens.
- Connect the Oscilloscope to pin 1 of CF102 on the Process Circuit Section of the Main Board.
- Adjust data with the **ARROW** keys so that the Signal section becomes flat against the BLK2 signal as shown in Fig. 5-24.
- Set the Automatic/Manual Gain Selection Switch to HIGH position.
- Confirm that the center of the Signal section and BLK2 signal becomes coincided.
- If not, readjust data with the **ARROW** keys so that the Signal section becomes flat against the BLK2 signal as shown in Fig. 5-24.

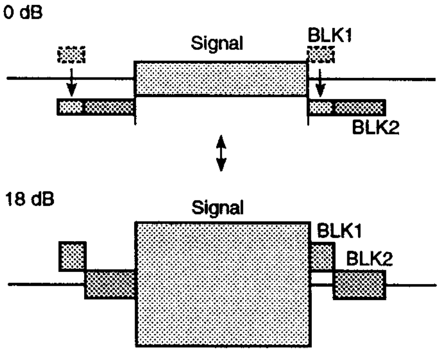


Fig. 5-24

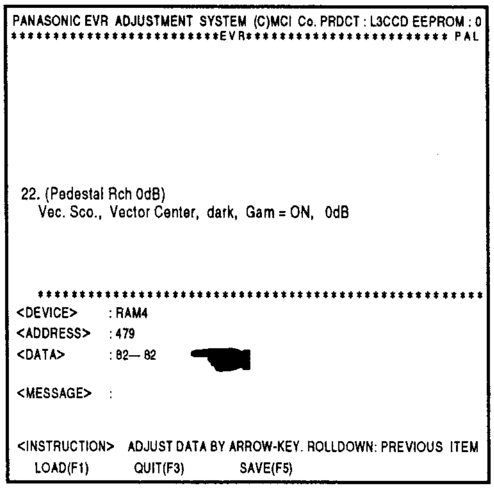
- Press the **ENTER** key for next adjustment.

(22) Pedestal Rch 0dB Adjustment

Test Point: Video Out Connector 1 Rear Panel

Adjust: RAM4 (479) Main Board

- The menu as shown in Table 5-27 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL

 22. (Pedestal Rch 0dB)
   Vec. Sco., Vector Center, dark, Gam = ON,  0dB

   *****************************************************
<DEVICE>      : RAM4
<ADDRESS>     : 479
<DATA>        : 82— 82

<MESSAGE>     :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-27

- Set the Automatic/Manual Gain Selection Switch to OFF position.
- Set the Gain Control of the Vectorscope to maximum.
- Cap on the Lens.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-25.

Positioned at center.

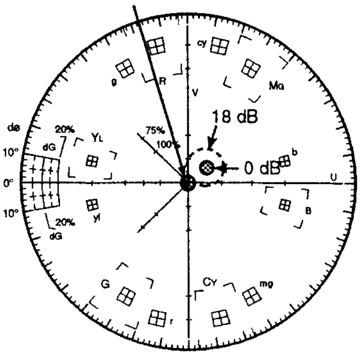


Fig. 5-25

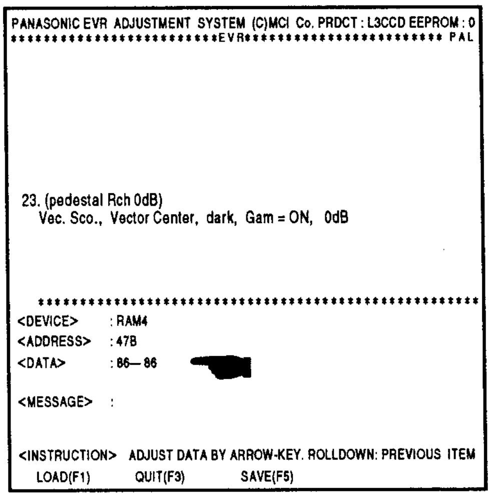
- Press the **ENTER** key for next adjustment.

(23) Pedestal Bch 0dB Adjustment

Test Point: **Video Out Connector 1** **Rear Panel**

Adjust: **RAM4 (47B)** **Main Board**

- The menu as shown in Table 5-28 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

23. (pedestal Rch 0dB)
   Vec. Sco., Vector Center, dark, Gam = ON, 0dB

**************************************************
<DEVICE>      : RAM4
<ADDRESS>     : 47B
<DATA>        : 86—86

<MESSAGE>     :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-28

- Set the Gain Control of the Vectorscope to maximum.
- Cap on the Lens.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-26.

Positioned at center.

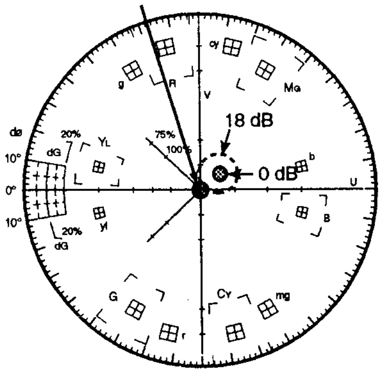


Fig. 5-26

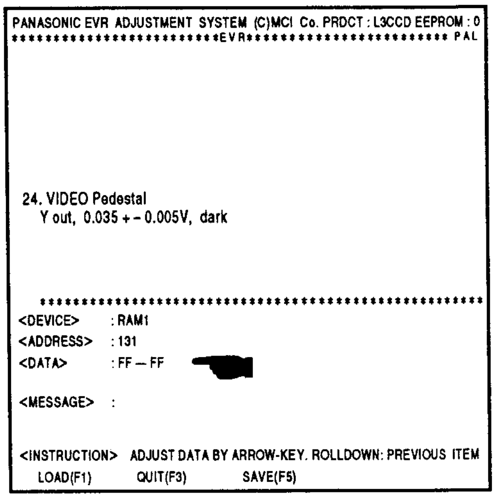
- Press the **ENTER** key for next adjustment.

(24) Video Pedestal Adjustment

Test Point: **Video Out Connector 1** **Rear Panel**

Adjust: **RAM1 (131)** **Main Board**

- The menu as shown in Table 5-29 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

24. VIDEO Pedestal
   Y out, 0.035 + - 0.005V, dark

**************************************************
<DEVICE>      : RAM1
<ADDRESS>     : 131
<DATA>        : FF — FF

<MESSAGE>     :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-29

- Cap on the Lens.
- Connect terminated Oscilloscope with 75Ω to the Video Output Connector 1 on the Rear Panel of the Camera Control Unit.
- Adjust data with the ARROW keys so that the Video Pedestal Level becomes 35 ± 5 mVp-p as shown in Fig 5-27.

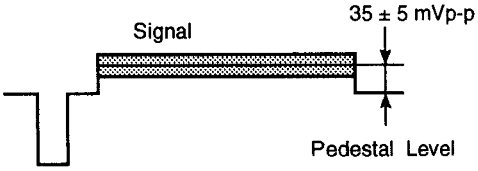


Fig. 5-27

- Press the **ENTER** key for next adjustment.

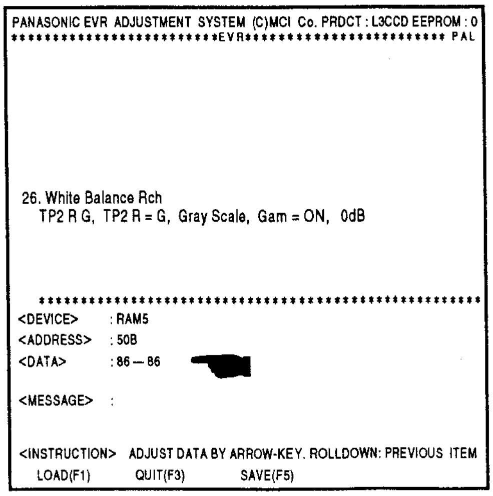
(26) Rch White Balance Adjustment

Test Point: **Pin 2 of CN6 (TP2G)** **Main Board**

Pin 4 of CN6 (TP2R) **Main Board**

Adjust: **RAM5 (50B)** **Main Board**

- The menu as shown in Table 5-30 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

26. White Balance Rch
   TP2 R G, TP2 R = G, Gray Scale, Gam = ON, 0dB

**************************************************
<DEVICE>      : RAM5
<ADDRESS>     : 50B
<DATA>        : 86 — 86

<MESSAGE>     :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-30

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 2 of CN6 on the Process Circuit section of the Main Board.
- Set the Lens Iris so that the signal at the pin 2 of CN6 becomes 280 ± 10 mVp-p as shown Fig. 5-28.

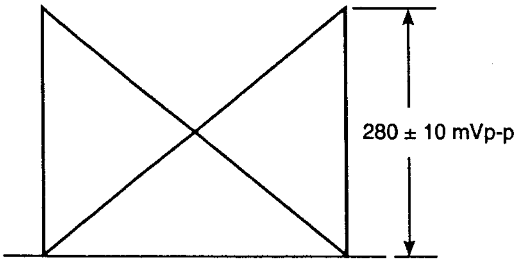


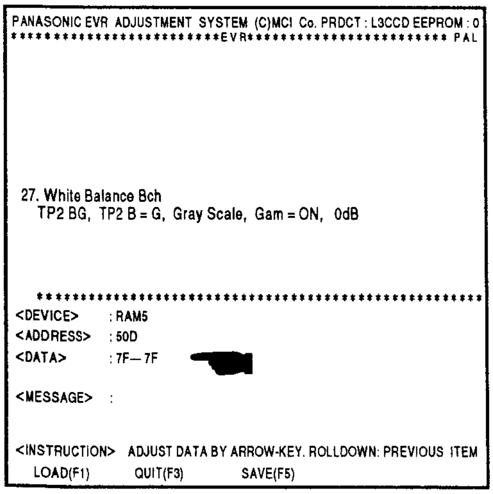
Fig. 5-28

- Change the Oscilloscope to pin 4 of CN6 on the Process Circuit section of the Main Board.
- Adjust data with the **ARROW** keys so that the signal level at pin 4 of CN6 becomes same signal level at the pin 2 of CN6.
- Press the **ENTER** key for next adjustment.

(27) Bch White Balance Adjustment

Test Point:	**Pin 2 of CN6 (TP2G)**	**Main Board**
	Pin 6 of CN6 (TP2B)	**Main Board**
Adjust:	**RAM5 (50D)**	**Main Board**

- The menu as shown in Table 5-31 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

 27. White Balance Bch
   TP2 BG,  TP2 B = G,  Gray Scale,  Gam = ON,   0dB

   **************************************************
<DEVICE>      : RAM5
<ADDRESS>     : 50D
<DATA>        : 7F— 7F

<MESSAGE>     :

<INSTRUCTION>   ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-31

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 2 of CN6 on the Process Circuit section of the Main Board.
- Set the Lens Iris so that the signal at the pin 2 of CN6 becomes 280 ± 10 mVp-p as shown in Fig. 5-28.

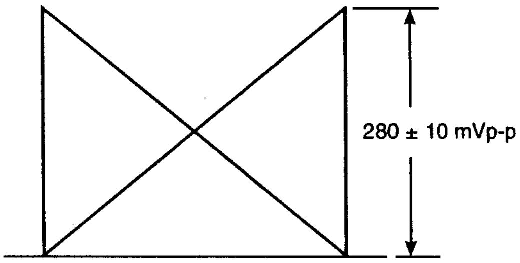


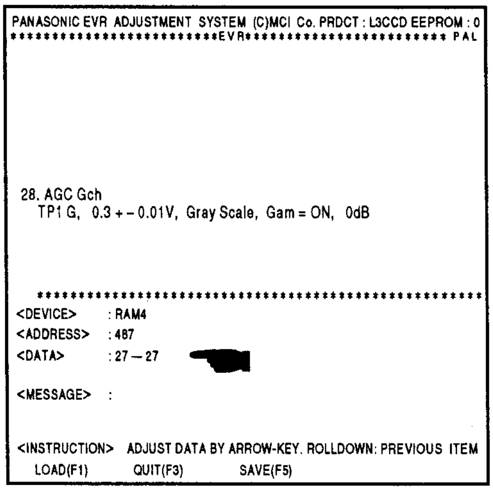
Fig. 5-29

- Change the Oscilloscope to pin 6 of CN6 on the Process Circuit section of the Main Board.
- Adjust data with the **ARROW** keys so that the signal level at pin 6 of CN6 becomes same signal level at pin 2 of CN6.
- Press the **ENTER** key for next adjustment.

(28) Gch AGC Gain Adjustment

Test Point:	**Pin 1 of CN6 (TP1G)**	**Main Board**
	Pin 8 of CN6 (TP3G)	**Main Board**
Adjust:	**RAM4 (487)**	**Main Board**

- The menu as shown in Table 5-32 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

 28. AGC Gch
   TP1 G,   0.3 + – 0.01V,  Gray Scale,  Gam = ON,   0dB

   **************************************************
<DEVICE>      : RAM4
<ADDRESS>     : 487
<DATA>        : 27 — 27

<MESSAGE>     :

<INSTRUCTION>   ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-32

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 1 of CN6 on the Process Circuit section of the Main Board.
- Adjust data with the **ARROW** keys so that the signal at pin 1 of CN6 becomes 300 ± 10 mVp-p as shown in Fig. 5-30.

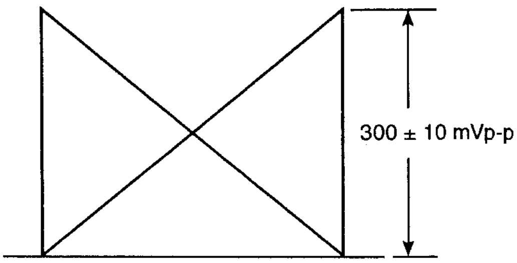


Fig. 5-30

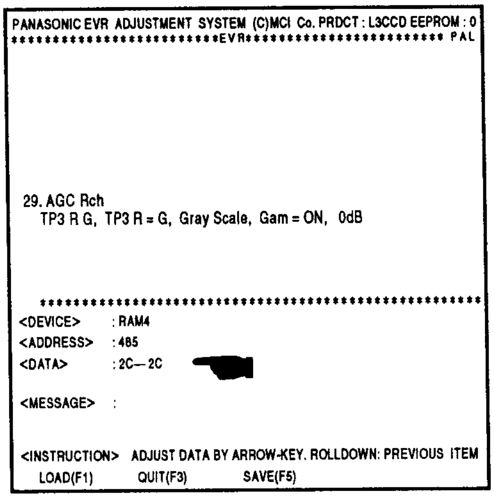
- Press the **ENTER** key for next adjustment.

(29) Rch AGC Gain Adjustment

Test Point: Pin 9 of CN6 (TP3R) **Main Board**

Adjust: RAM4 (485) **Main Board**

- The menu as shown in Table 5-33 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL

 29. AGC Rch
   TP3 R G,  TP3 R = G,  Gray Scale,  Gam = ON,   0dB

   *******************************************************
<DEVICE>      : RAM4
<ADDRESS>     : 485
<DATA>        : 2C— 2C

<MESSAGE>     :

<INSTRUCTION>   ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)        QUIT(F3)          SAVE(F5)
```

Table 5-33

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 9 of CN6 on the Process Circuit section of the Main Board.
- Adjust data with the **ARROW** keys so that the signal at pin 9 of CN6 becomes 300 ± 10 mVp-p as shown in Fig. 5-31.

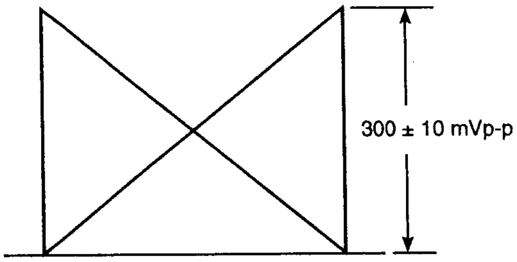


Fig. 5-31

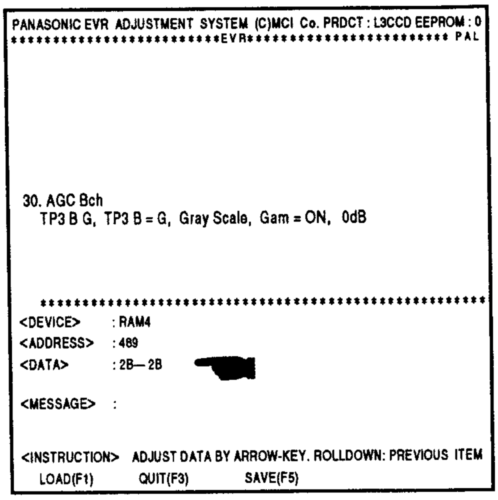
- Press the **ENTER** key for next adjustment.

(30) Bch AGC Gain Adjustment

Test Point: Pin 10 of CN6 (TP3B) **Main Board**

Adjust: RAM4 (489) **Main Board**

- The menu as shown in Table 5-34 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL

 30. AGC Bch
   TP3 B G,  TP3 B = G,  Gray Scale,  Gam = ON,   0dB

   *******************************************************
<DEVICE>      : RAM4
<ADDRESS>     : 489
<DATA>        : 2B— 2B

<MESSAGE>     :

<INSTRUCTION>   ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)        QUIT(F3)          SAVE(F5)
```

Table 5-34

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 10 of CN6 on the Process Circuit section of the Main Board.
- Adjust data with the **ARROW** keys so that the signal at pin 10 of CN6 becomes 300 ± 10 mVp-p as shown in Fig. 3-32.

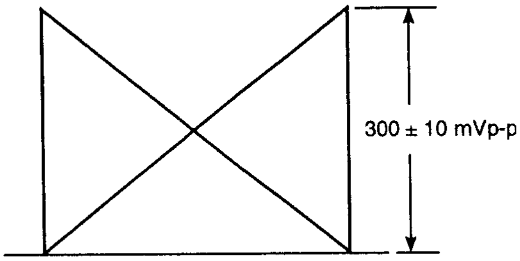


Fig. 3-32

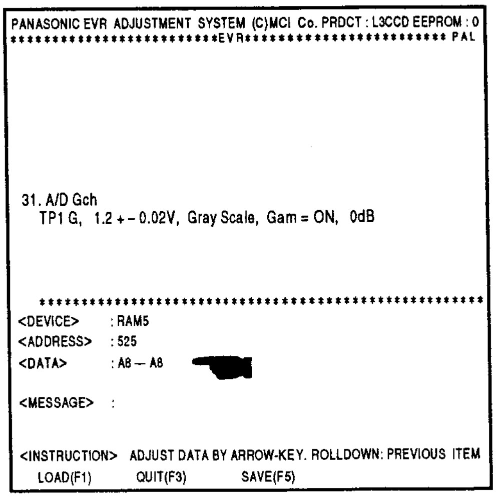
- Press the **ENTER** key for next adjustment.

(31) Gch A/D Level Adjustment

Test Point: Pin 7 of CN6 (TPG) **Main Board**

Adjust: RAM5 (525) **Main Board**

- The menu as shown in Table 5-35 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL

 31. A/D Gch
   TP1 G,   1.2 + - 0.02V,  Gray Scale,  Gam = ON,   0dB

   *******************************************************
<DEVICE>      : RAM5
<ADDRESS>     : 525
<DATA>        : A8 — A8

<MESSAGE>     :

<INSTRUCTION>   ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)        QUIT(F3)          SAVE(F5)
```

Table 5-35

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 7 of CN6 on the Process Circuit section of the Main Board.
- Adjust data with the **ARROW** keys so that the signal at pin 7 of CN6 becomes 1.2 ± 0.02 Vp-p as shown in Fig. 5-33.

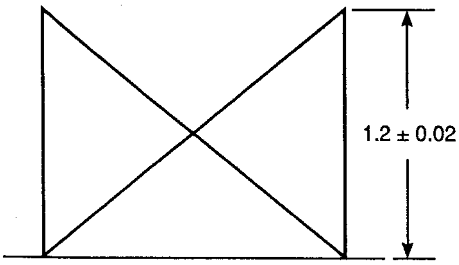


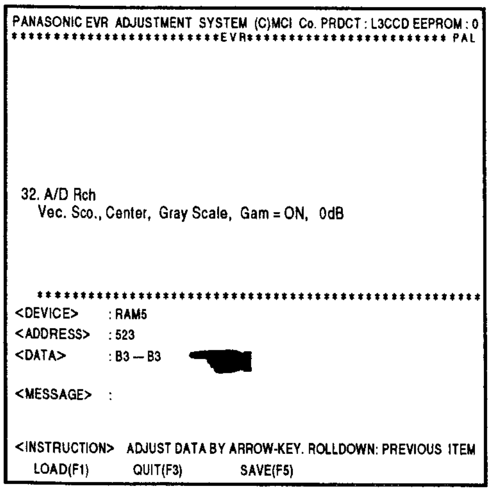
Fig. 5-33

- Press the **ENTER** key for next adjustment.

(32) Rch A/D Level Adjustment

Test Point: **Video Out Connector 1** **Rear Panel**
Adjust: **RAM5 (523)** **Main Board**

- The menu as shown in Table 5-36 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL


  32. A/D Rch
     Vec. Sco., Center, Gray Scale, Gam = ON, 0dB

*******************************************************
<DEVICE>      : RAM5
<ADDRESS>     : 523
<DATA>        : B3 — B3

<MESSAGE>     :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-36

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-34.

Positioned at center.

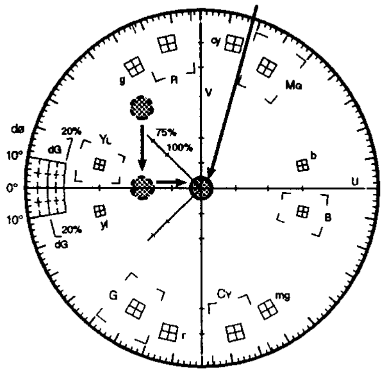


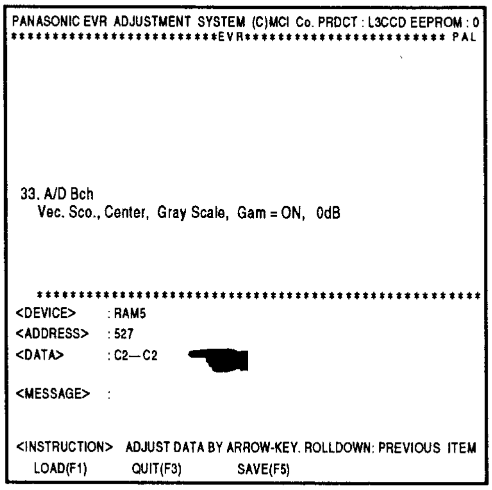
Fig. 5-34

- Press the **ENTER** key for next adjustment.

(33) Bch A/D Level Adjustment

Test Point: **Video Out Connector 1** **Rear Panel**
Adjust: **RAM5 (527)** **Main Board**

- The menu as shown in Table 5-37 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL


  33. A/D Bch
     Vec. Sco., Center, Gray Scale, Gam = ON, 0dB

*******************************************************
<DEVICE>      : RAM5
<ADDRESS>     : 527
<DATA>        : C2—C2

<MESSAGE>     :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-37

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-35.

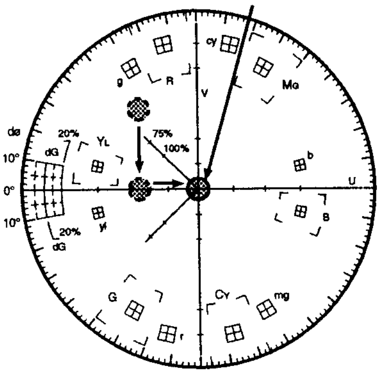


Fig. 5-35

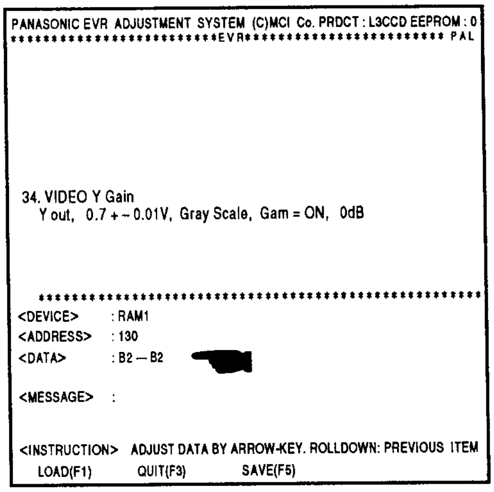
- Press the **ENTER** key for next adjustment.

(34) Video Y Gain Adjustment

Test Point: Video Out Connector 1 Rear Panel

Adjust: RAM1 (130) Main Board

- The menu as shown in Table 5-38 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

 34. VIDEO Y Gain
   Y out,  0.7 + - 0.01V,  Gray Scale,  Gam = ON,  0dB

*****************************************************
<DEVICE>     : RAM1
<ADDRESS>    : 130
<DATA>       : B2 - B2

<MESSAGE>    :

<INSTRUCTION>   ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)        QUIT(F3)         SAVE(F5)
```

Table 5-38

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector 1 on the Rear Panel of the Camera Control Unit.
- Adjust data with the **ARROW** keys so that the Y Level becomes 700 ± 10 mVp-p as shown in Fig. 5-36.

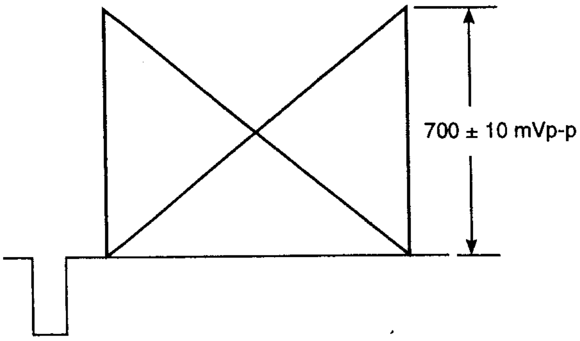


Fig. 5-36

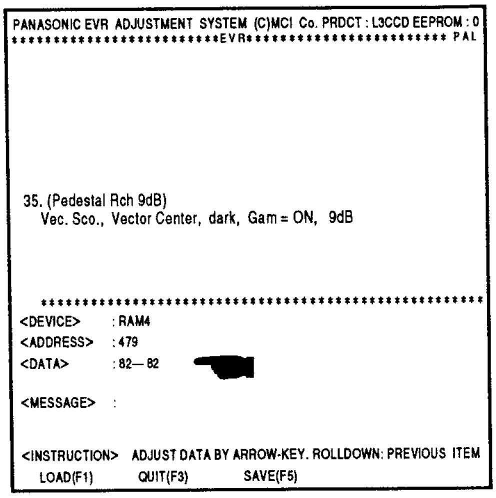
- Press the **ENTER** key for next adjustment.

(35) Rch Pedestal 9dB Adjustment

Test Point: Video Out Connector 1 Rear Panel

Adjust: RAM4 (479) Main Board

- The menu as shown in Table 5-39 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

 35. (Pedestal Rch 9dB)
   Vec. Sco.,  Vector Center,  dark,  Gam = ON,  9dB

*****************************************************
<DEVICE>     : RAM4
<ADDRESS>    : 479
<DATA>       : 82—82

<MESSAGE>    :

<INSTRUCTION>   ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)        QUIT(F3)         SAVE(F5)
```

Table 5-39

- Set the Automatic/Manual Gain Selection Switch to LOW position.
- Cap on the Lens.
- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-37.

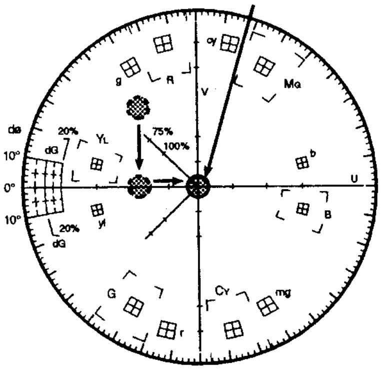


Fig. 5-37

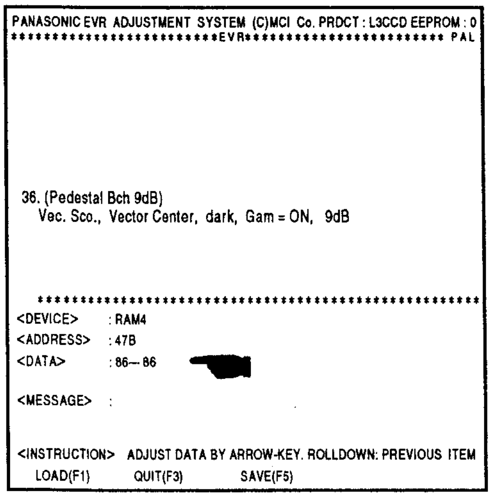
- Press the **ENTER** key for next adjustment.

(36) Bch Pedestal 9dB Adjustment

Test Point: Video Out Connector 1 Rear Panel

Adjust: RAM4 (47B) Main Board

- The menu as shown in Table 5-40 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR*************************** PAL



 36. (Pedestal Bch 9dB)
   Vec. Sco., Vector Center, dark, Gam = ON,  9dB



   ***********************************************************
<DEVICE>      : RAM4
<ADDRESS>     : 47B
<DATA>        : 86— 86

<MESSAGE>     :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)      QUIT(F3)          SAVE(F5)
```

Table 5-40

- Cap on the Lens.
- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-38.

Positioned at center.

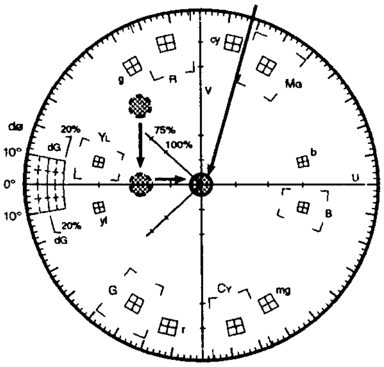


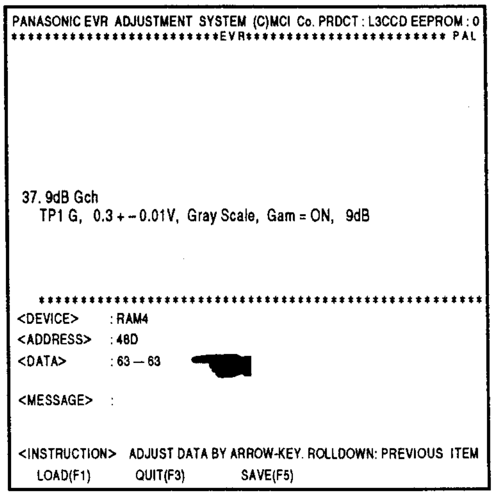
Fig. 5-38

- Press the **ENTER** key for next adjustment.

(37) Gch 9dB Level Adjustment

Test Point:	**Pin 2 of CN6 (TP2G)**	**Main Board**
	Pin 1 of CN6 (TP1G)	**Main Board**
Adjust:	**RAM4 (48D)**	**Main Board**

- The menu as shown in Table 5-41 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR*************************** PAL



 37. 9dB Gch
   TP1 G,  0.3 + - 0.01V,  Gray Scale,  Gam = ON,  9dB



   ***********************************************************
<DEVICE>      : RAM4
<ADDRESS>     : 48D
<DATA>        : 63 — 63

<MESSAGE>     :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)      QUIT(F3)          SAVE(F5)
```

Table 5-41

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 2 of CN6 on the Process Circuit section of the Main Board.
- Set the Lens Iris so that the signal level at pin 2 of CN6 on the Process Circuit section of the Main Board becomes 100mVp-p as shown in Fig. 5-39.

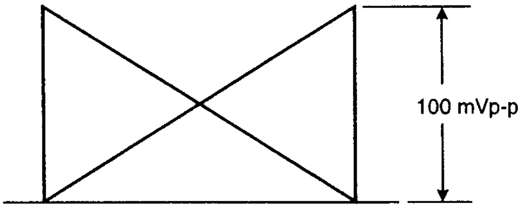


Fig. 5-39

- Change the Oscilloscope to pin 1 of CN6 on the Process Circuit section of the Main Board.
- Adjust data with the **ARROW** keys so that the signal level at pin 1 of CN6 becomes 300 ± 10mVp-p as shown in Fig. 5-40.

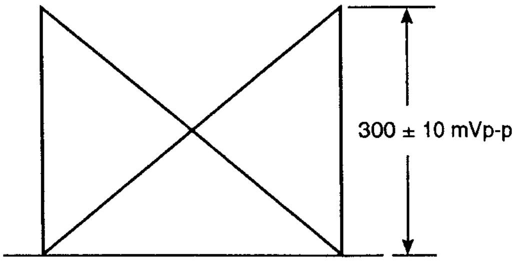


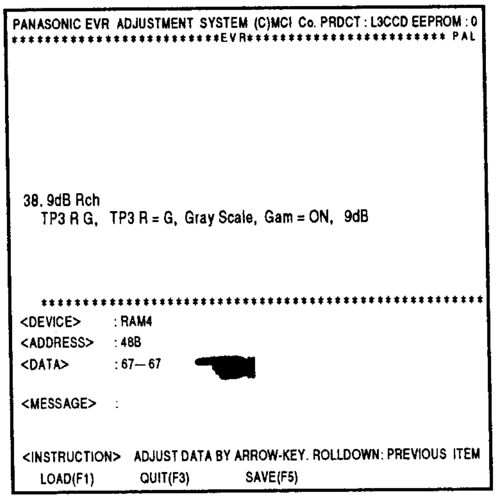
Fig. 5-40

- Press the **ENTER** key for next adjustment.

(38) Rch 9dB Level Adjustment

Test Point:	**Pin 2 of CN6 (TP2G)**	**Main Board**
	Video Out Connector 1	**Rear Panel**
Adjust:	**RAM4 (48B)**	**Main Board**

- The menu as shown in Table 5-42 will be displayed.



PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

38. 9dB Rch
TP3 R G, TP3 R = G, Gray Scale, Gam = ON, 9dB

****
<DEVICE> : RAM4
<ADDRESS> : 48B
<DATA> : 67—67

<MESSAGE> :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
LOAD(F1) QUIT(F3) SAVE(F5)

Table 5-42

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 2 of CN6 on the Process Circuit section of the Main Board.
- Set the Lens Iris so that the signal level at pin 2 of CN6 on the Process Circuit section of the Main Board becomes 100mVp-p as shown in Fig. 5-41.

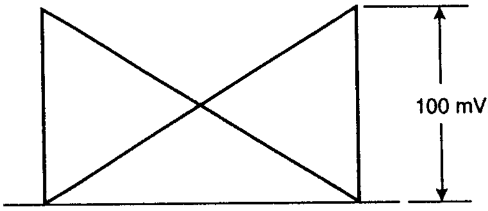


Fig. 5-41

- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-42.

Positioned at center.

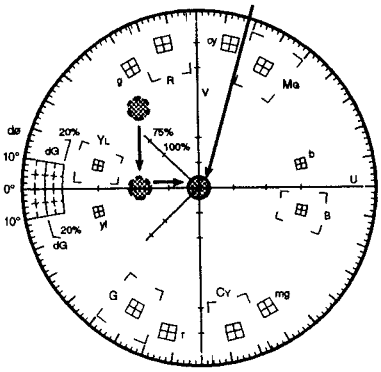


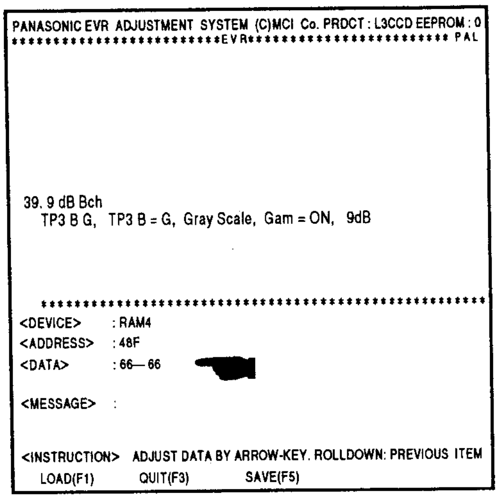
Fig. 5-42

- Press the **ENTER** key for next adjustment.

(39) Bch 9dB Level Adjustment

Test Point: Pin 2 of CN6 (TP2G) **Main Board**
Video Out Connector 1 **Rear Panel**
Adjust: RAM4 (48F) **Main Board**

- The menu as shown in Table 5-43 will be displayed.



PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

39. 9 dB Bch
TP3 B G, TP3 B = G, Gray Scale, Gam = ON, 9dB

****
<DEVICE> : RAM4
<ADDRESS> : 48F
<DATA> : 66—66

<MESSAGE> :

<INSTRUCTION> ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
LOAD(F1) QUIT(F3) SAVE(F5)

Table 5-43

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 2 of CN6 on the Process Circuit section of the Main Board.
- Set the Lens Iris so that the signal level at pin 2 of CN6 on the Process Circuit section of the Main Board becomes 100mVp-p as shown in Fig. 5-43.

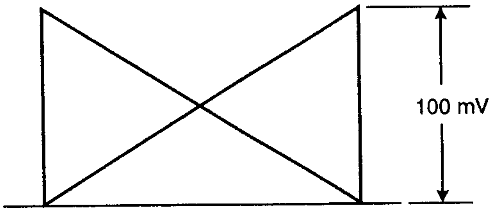


Fig. 5-43

- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vectoı positions at center of the Vectorscope as shown in Fig. 5-44.

Positioned at center.

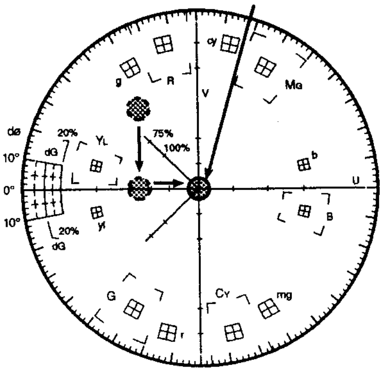


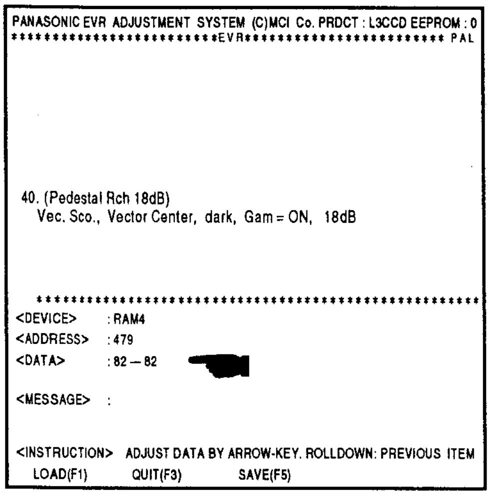
Fig. 5-44

- Press the **ENTER** key for next adjustment.

(40) Rch Pedestal 18dB Adjustment

Test Point: **Video Out Connector 1** **Rear Panel**
Adjust: **RAM4 (479)** **Main Board**

- The menu as shown in Table 5-44 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
************************EVR************************* PAL

40. (Pedestal Rch 18dB)
  Vec. Sco., Vector Center, dark, Gam = ON, 18dB

***************************************************
<DEVICE>    : RAM4
<ADDRESS>   : 479
<DATA>      : 82 — 82

<MESSAGE>   :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)      QUIT(F3)       SAVE(F5)
```

Table 5-44

- Set the Automatic/Manual Gain Selection Switch to HIGH position.
- Cap on the Lens.
- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-45.

Positioned at center.

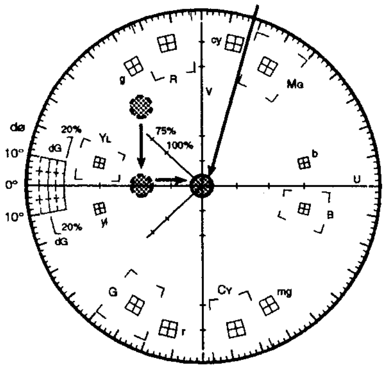


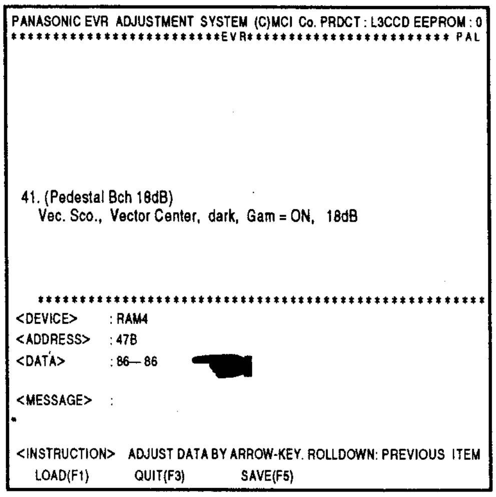
Fig. 5-45

- Press the **ENTER** key for next adjustment.

(41) Bch Pedestal 18dB Adjustment

Test Point: **Video Out Connector 1** **Rear Panel**
Adjust: **RAM4 (47B)** **Main Board**

- The menu as shown in Table 5-45 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
************************EVR************************* PAL

41. (Pedestal Bch 18dB)
  Vec. Sco., Vector Center, dark, Gam = ON, 18dB

***************************************************
<DEVICE>    : RAM4
<ADDRESS>   : 47B
<DATA>      : 86— 86

<MESSAGE>   :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)      QUIT(F3)       SAVE(F5)
```

Table 5-45

- Cap on the Lens.
- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-46.

Positioned at center.

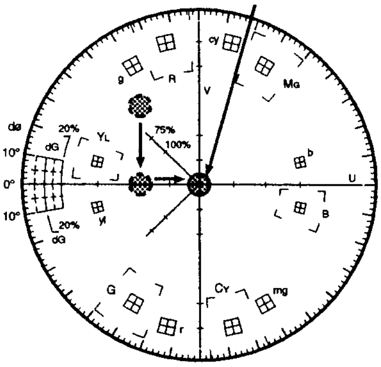


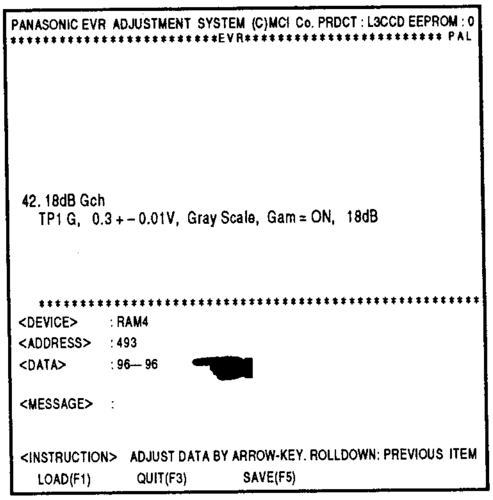
Fig. 5-46

- Press the **ENTER** key for next adjustment.

(42) Gch 18dB Level Adjustment

Test Point: **Pin 2 of CN6 (TP2G)** **Main Board**
Pin 1 of CN6 (TP1G) **Main Board**
Adjust: **RAM4 (493)** **Main Board**

- The menu as shown in Table 5-46 will be displayed.



```
PANASONIC EVR  ADJUSTMENT  SYSTEM  (C)MCI  Co. PRDCT : L3CCD EEPROM : 0
***************************EVR***************************** PAL




 42. 18dB Gch
    TP1 G,  0.3 + - 0.01V,  Gray Scale,  Gam = ON,   18dB



    ***********************************************************
<DEVICE>       : RAM4
<ADDRESS>      : 493
<DATA>         : 96— 96

<MESSAGE>      :

<INSTRUCTION>   ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS  ITEM
   LOAD(F1)        QUIT(F3)          SAVE(F5)
```

Table 5-46

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 2 of CN6 on the Process Circuit section of the Main Board.
- Set the Lens Iris so that the signal level at pin 2 of CN6 on the Process Circuit section of the Main Board becomes 36 mVp-p as shown in Fig. 5-47.

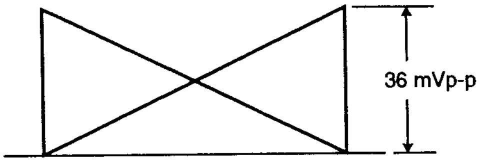


Fig. 5-47

- Change the Oscilloscope to pin 1 of CN6 on the Process Circuit section of the Main Board.
- Adjust data with the **ARROW** keys so that the signal level at pin 1 of CN6 becomes 300 ± 10 mVp-p as shown in Fig. 5-48.

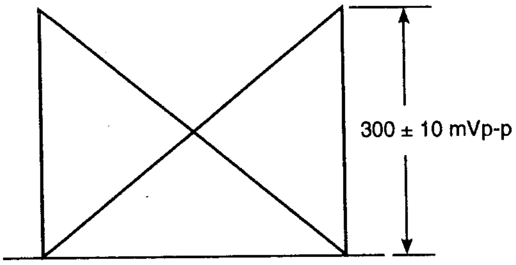


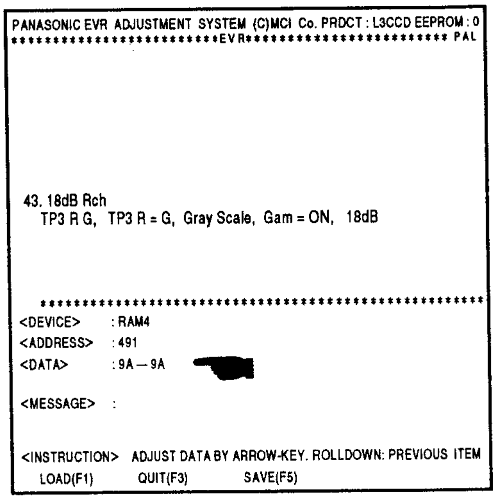
Fig. 5-48

- Press the **ENTER** key for next adjustment.

(43) Rch 18dB Level Adjustment

Test Point:	**Pin 2 of CN6 (TP2G)**	**Main Board**
	Video Out Connector 1	**Rear Panel**
Adjust:	**RAM4 (491)**	**Main Board**

- The menu as shown in Table 5-47 will be displayed.



```
PANASONIC EVR  ADJUSTMENT  SYSTEM  (C)MCI  Co. PRDCT : L3CCD EEPROM : 0
***************************EVR***************************** PAL




 43. 18dB Rch
    TP3 R G,  TP3 R = G,  Gray Scale,  Gam = ON,   18dB



    ***********************************************************
<DEVICE>       : RAM4
<ADDRESS>      : 491
<DATA>         : 9A — 9A

<MESSAGE>      :

<INSTRUCTION>   ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS  ITEM
   LOAD(F1)        QUIT(F3)          SAVE(F5)
```

Table 5-47

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 2 of CN6 on the Process Circuit section of the Main Board.
- Set the Lens Iris so that the signal level at pin 2 of CN6 on the Process Circuit section of the Main Board becomes 36 mVp-p as shown in Fig. 5-49.

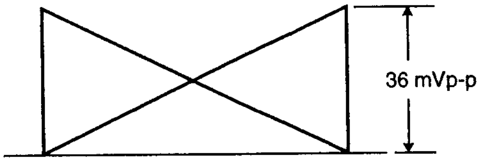


Fig. 5-49

- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-50.

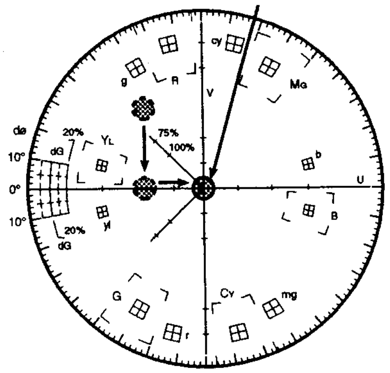

Positioned at center.

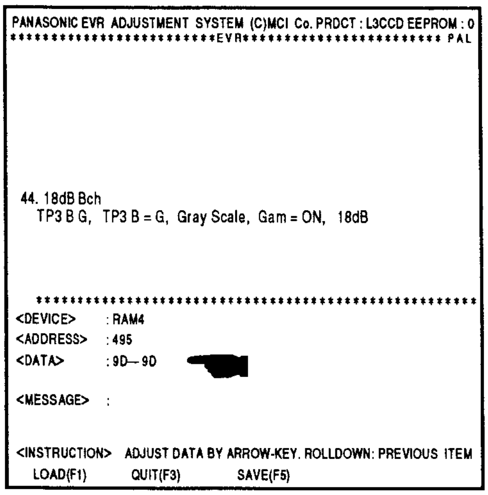
Fig. 5-50

- Press the **ENTER** key for next adjustment.

(44) Bch 18dB Level Adjustment

Test Point: **Pin 2 of CN6 (TP2G)** **Main Board**
Video Out Connector 1 **Rear Panel**
Adjust: **RAM4 (495)** **Main Board**

- The menu as shown in Table 5-48 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL




 44. 18dB Bch
   TP3 B G,  TP3 B = G,  Gray Scale,  Gam = ON,   18dB


   ******************************************************
<DEVICE>      : RAM4
<ADDRESS>     : 495
<DATA>        : 9D— 9D

<MESSAGE>     :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)          SAVE(F5)
```

Table 5-48

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 2 of CN6 on the Process Circuit section of the Main Board.
- Set the Lens Iris so that the signal level at pin 2 of CN6 on the Process Circuit section of the Main Board becomes 36 mVp-p as shown in Fig. 5-51.

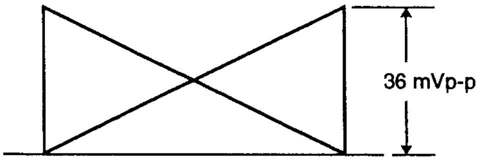


Fig. 5-51

- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-52.

Positioned at center.

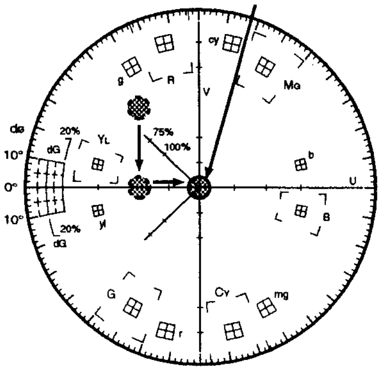


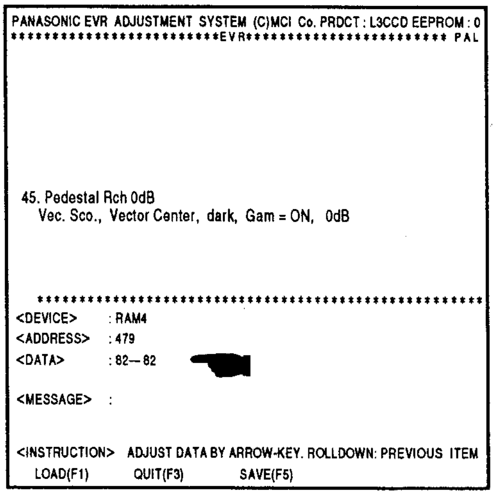
Fig. 5-52

- Press the **ENTER** key for next adjustment.

(45) Rch Pedestal 0dB Adjustment

Test Point: **Video Out Connector 1** **Rear Panel**
Adjust: **RAM4 (479)** **Main Board**

- The menu as shown in Table 5-49 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
**************************EVR************************** PAL




 45. Pedestal Rch 0dB
   Vec. Sco., Vector Center, dark, Gam = ON,  0dB


   ******************************************************
<DEVICE>      : RAM4
<ADDRESS>     : 479
<DATA>        : 82— 82

<MESSAGE>     :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)          SAVE(F5)
```

Table 5-49

- Set the Automatic/Manual Gain Selection Switch to OFF position.
- Cap on the Lens.
- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-53.

Positioned at center.

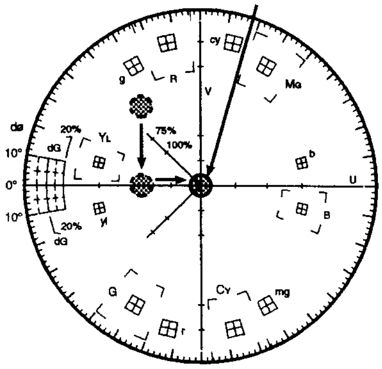


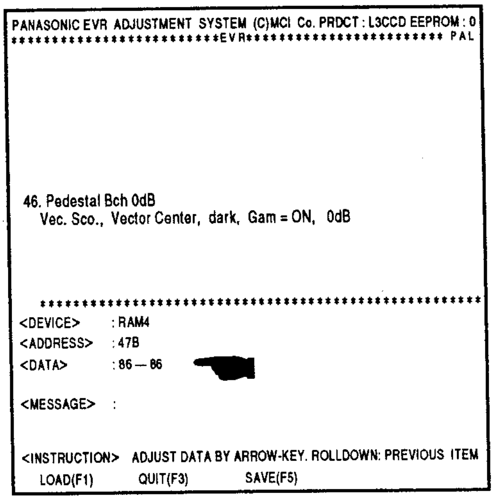
Fig. 5-53

- Press the **ENTER** key for next adjustment.

(46) Bch Pedestal 0dB Adjustment

Test Point: **Video Out Connector 1** **Rear Panel**
Adjust: **RAM4(47B)** **Main Board**

- The menu as shown in Table 5-50 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

46. Pedestal Bch 0dB
   Vec. Sco., Vector Center, dark, Gam = ON, 0dB

*****************************************************
<DEVICE>     : RAM4
<ADDRESS>    : 47B
<DATA>       : 86 — 86

<MESSAGE>  :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 5-50

- Cap on the Lens.
- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-54.

Positioned at center.

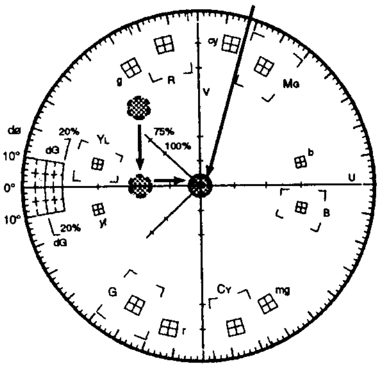
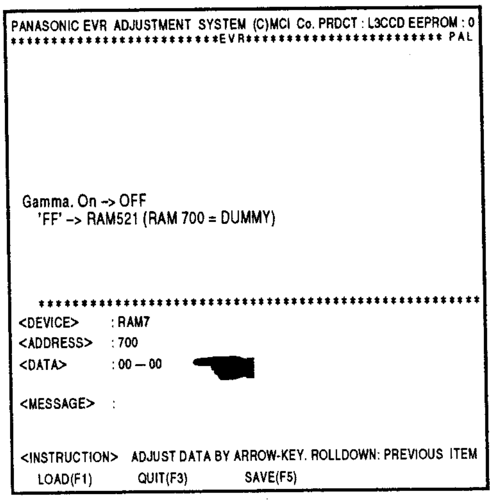


Fig. 5-54

- Press the **ENTER** key for next adjustment, the menu as shown in Table 5-51 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

Gamma. On -> OFF
   'FF' -> RAM521 (RAM 700 = DUMMY)

*****************************************************
<DEVICE>     : RAM7
<ADDRESS>    : 700
<DATA>       : 00 — 00

<MESSAGE>  :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 5-51

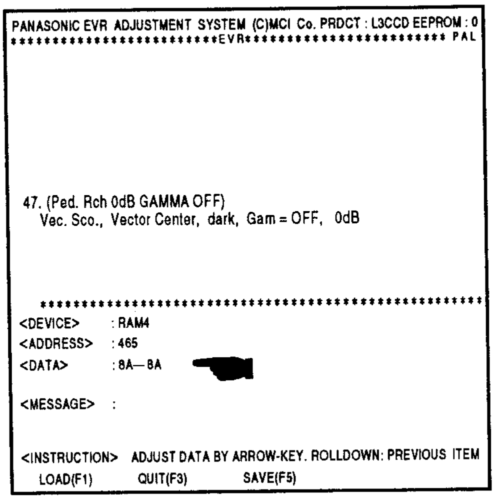
- Press the **ENTER** key so that the Gamma Switch should be set to OFF position automatically.

(47) Rch Pedestal 0dB (Gamma Off) Adjustment

Test Point: **Video Out Connector 1** **Rear Panel**

Adjust: **RAM4 (465)** **Main Board**

- The menu as shown in Table 5-52 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

47. (Ped. Rch 0dB GAMMA OFF)
   Vec. Sco., Vector Center, dark, Gam = OFF, 0dB

*****************************************************
<DEVICE>     : RAM4
<ADDRESS>    : 465
<DATA>       : 8A— 8A

<MESSAGE>  :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 5-52

- Cap on the Lens.
- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-55.

Positioned at center.

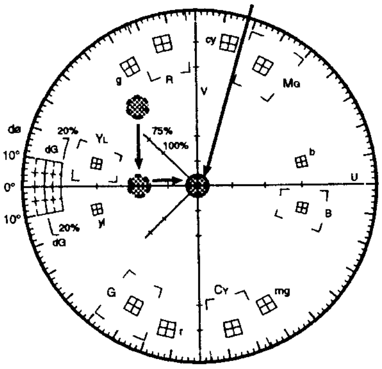


Fig. 5-55

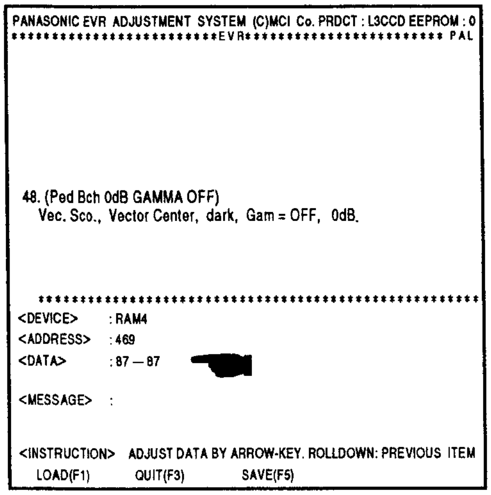
- Press the **ENTER** key for next adjustment.

(48) Bch Pedestal 0dB (Gamma Off) Adjustment

Test Point: **Video Out Connector 1** **Rear Pane**

Adjust: **RAM4 (469)** **Main Boar**

- The menu as shown in Table 5-53 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

48. (Ped Bch 0dB GAMMA OFF)
  Vec. Sco., Vector Center, dark, Gam = OFF, 0dB.

*****************************************************
<DEVICE>      : RAM4
<ADDRESS>     : 469
<DATA>        : 87 — 87

<MESSAGE>  :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 5-53

- Cap on the Lens.
- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-56.

Positioned at center.

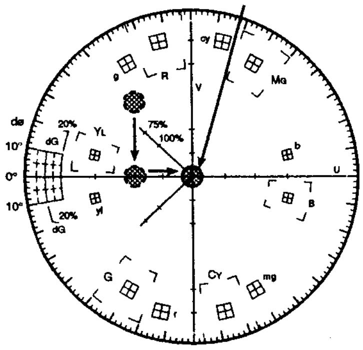


Fig. 5-56

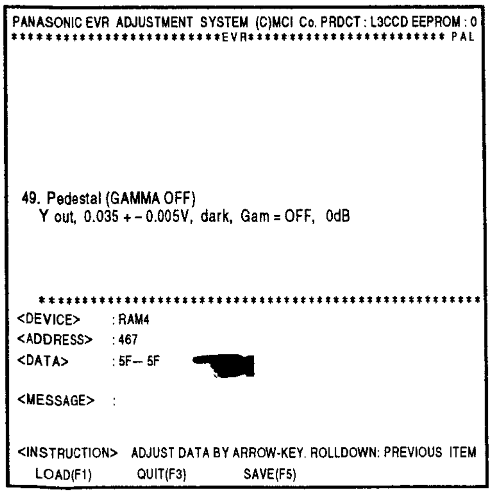
- Press the **ENTER** key for next adjustment.

(49) Y Pedestal (Gamma Off) Adjustment

Test Point: **Video Out Connector 1** **Rear Panel**

Adjust: **RAM4 (467)** **Main Board**

- The menu as shown in Table 5-53 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

49. Pedestal (GAMMA OFF)
  Y out, 0.035 + - 0.005V, dark, Gam = OFF, 0dB

*****************************************************
<DEVICE>      : RAM4
<ADDRESS>     : 467
<DATA>        : 5F— 5F

<MESSAGE>  :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 5-54

- Cap on the Lens.
- Connect the terminated Oscilloscope with 75Ω to the Video Output Connector 1 on the Rear Panel of the Camera Control Unit.
- Adjust data with the **ARROW** keys so that the Video Pedestal Level becomes 35 ± 5 mVp-p as shown in Fig. 5-57.

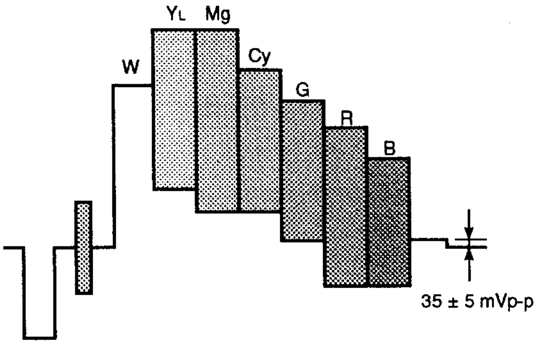


Fig. 5-57

- Press the **ENTER** key for next adjustment.

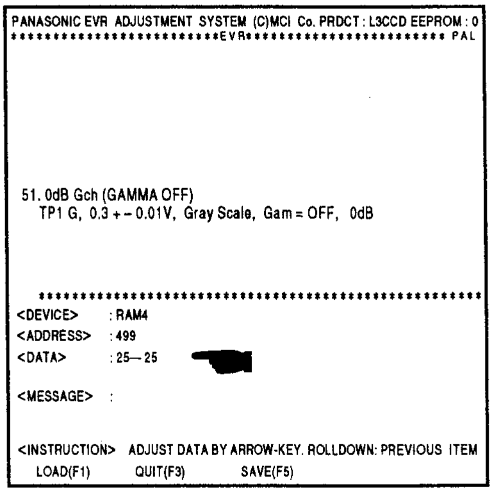
(51) Gch 0dB Level (Gamma Off) Adjustment

Test Point: **Pin 2 of CN6 (TP2G)** **Main Board**

Pin 1 of CN6 (TP1G) **Main Board**

Adjust: **RAM4 (499)** **Main Board**

- The menu as shown in Table 5-55 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

51. 0dB Gch (GAMMA OFF)
  TP1 G, 0.3 + - 0.01V, Gray Scale, Gam = OFF, 0dB

*****************************************************
<DEVICE>      : RAM4
<ADDRESS>     : 499
<DATA>        : 25— 25

<MESSAGE>  :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 5-55

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 2 of CN6 on the Process Circuit section of the Main Board.
- Set the Lens Iris so that the signal at the pin 2 of CN6 becomes 280 ± 10 mVp-p as shown in Fig. 5-58.

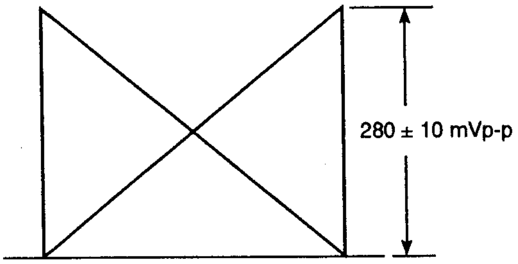


Fig. 5-58

- Change the Oscilloscope to pin 1 of CN6 on the Process Circuit section of the Main Board.
- Adjust data with the **ARROW** keys so that the signal at pin 1 of CN6 becomes 300 ± 10 mVp-p as shown in Fig. 5-59.

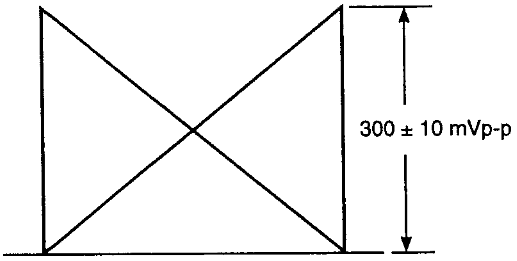


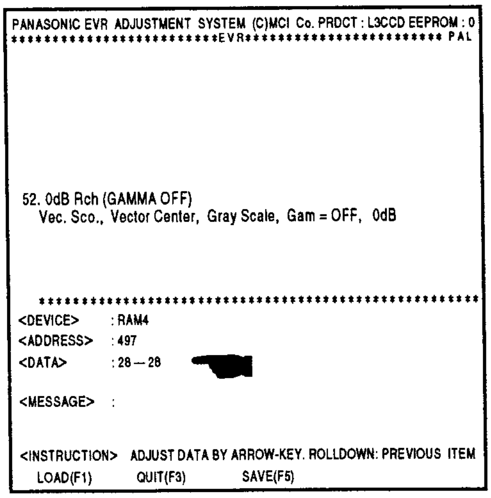
Fig. 5-59

- Press the **ENTER** key for next adjustment.

(52) Rch 0dB Level (Gamma Off) Adjustment

Test Point: **Pin 2 of CN6 (TP2G)** **Main Board**
Video Out Connector 1 **Rear Panel**
Adjust: **RAM4 (497)** **Main Board**

- The menu as shown in Table 5-56 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

52. 0dB Rch (GAMMA OFF)
  Vec. Sco., Vector Center, Gray Scale, Gam = OFF, 0dB

****************************************************
<DEVICE>    : RAM4
<ADDRESS>   : 497
<DATA>      : 28 — 28

<MESSAGE>   :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)      QUIT(F3)        SAVE(F5)
```

Table 5-56

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 2 of CN6 on the Process Circuit section of the Main Board.
- Set the Lens Iris so that the signal at the pin 2 of CN6 becomes 280 ± 10 mVp-p as shown in Fig. 5-60.

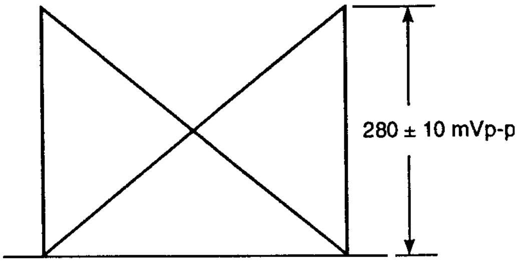


Fig. 5-60

- Set the gain of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vecto positions at center of the Vectorscope as shown in Fig. 5 61.

Positioned at center.

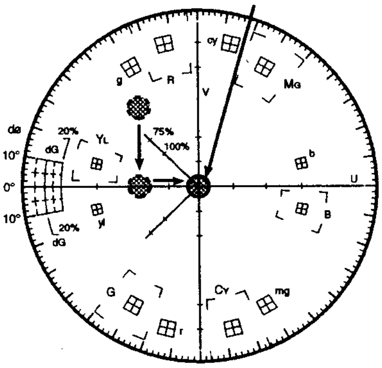


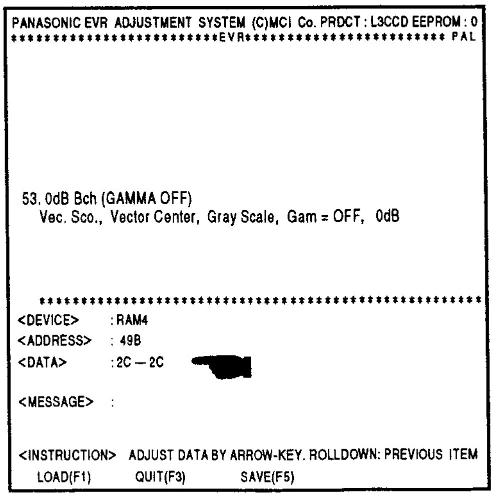
Fig. 5-61

- Press the **ENTER** key for next adjustment.

(53) Bch 0dB Level (Gamma Off) Adjustment

Test Point: **Pin 2 of CN6 (TP2G)** **Main Boar**
Video Out Connector 1 **Rear Pane**
Adjust: **RAM4 (49B)** **Main Boar**

- The menu as shown in Table 5-57 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

53. 0dB Bch (GAMMA OFF)
  Vec. Sco., Vector Center, Gray Scale, Gam = OFF, 0dB

****************************************************
<DEVICE>    : RAM4
<ADDRESS>   : 49B
<DATA>      : 2C — 2C

<MESSAGE>   :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)      QUIT(F3)        SAVE(F5)
```

Table 5-57

- Aim the Camera at the Logarithmic Gray Scale Chart.

- Connect the Oscilloscope to pin 2 of CN6 on the Process Circuit section of the Main Board.
- Set the Lens Iris so that the signal at the pin 2 of CN6 becomes 280 ± 10 mVp-p as shown in Fig. 5-62.

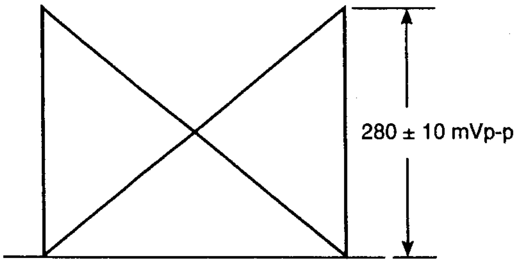


Fig. 5-62

- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-63.

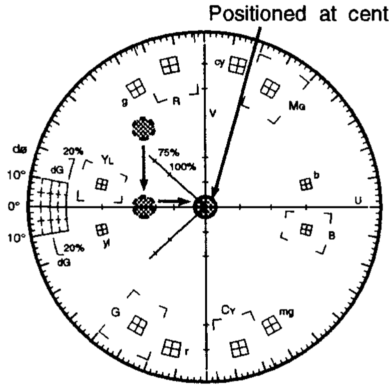


Fig. 5-63

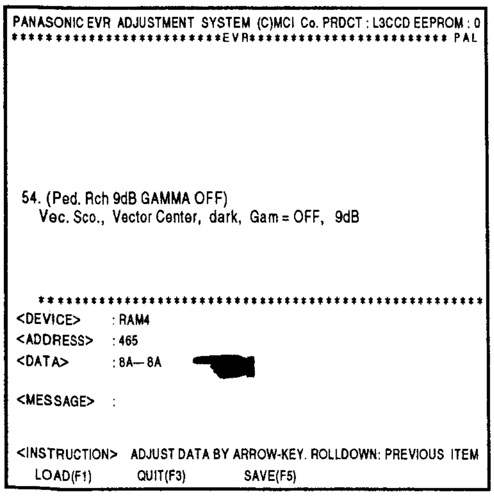
- Press the **ENTER** key for next adjustment.

(54) Rch Pedestal 9dB (Gamma Off) Adjustment

Test Point: **Video Out Connector 1** **Rear Panel**

Adjust: **RAM4 (465)** **Main Board**

- The menu as shown in Table 5-58 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************ PAL

54. (Ped. Rch 9dB GAMMA OFF)
   Vec. Sco., Vector Center, dark, Gam = OFF, 9dB

***************************************************
<DEVICE>      : RAM4
<ADDRESS>     : 465
<DATA>        : 8A—8A

<MESSAGE>  :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-58

- Set the Automatic/Manual Gain Selection Switch to LOW position.
- Cap on the Lens.
- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-64.

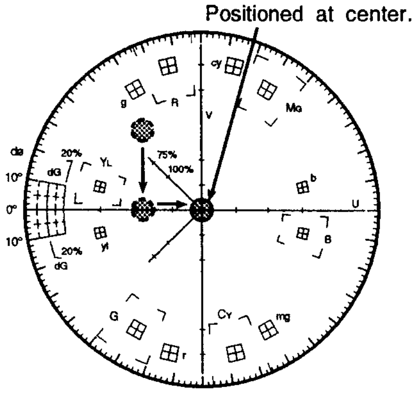


Fig. 5-64

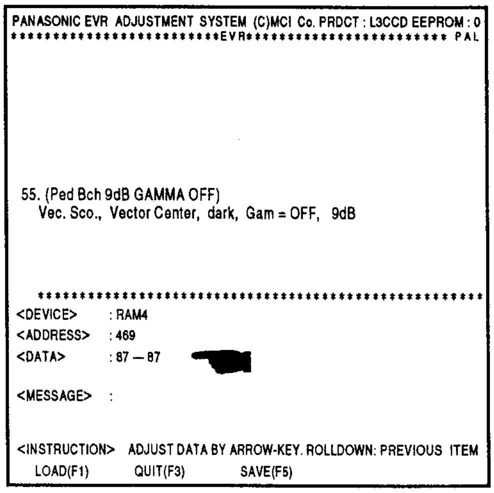
- Press the **ENTER** key for next adjustment.

(55) Bch Pedestal 9dB (Gamma Off) Adjustment

Test Point: **Video Out Connector 1** **Rear Panel**

Adjust: **RAM4 (469)** **Main Board**

- The menu as shown in Table 5-59 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************ PAL

55. (Ped Bch 9dB GAMMA OFF)
   Vec. Sco., Vector Center, dark, Gam = OFF, 9dB

***************************************************
<DEVICE>      : RAM4
<ADDRESS>     : 469
<DATA>        : 87 — 87

<MESSAGE>  :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-59

- Cap on the Lens.
- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-65.

Positioned at center.

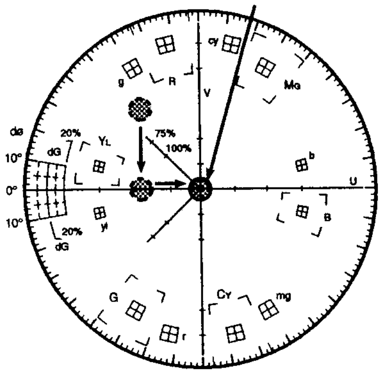


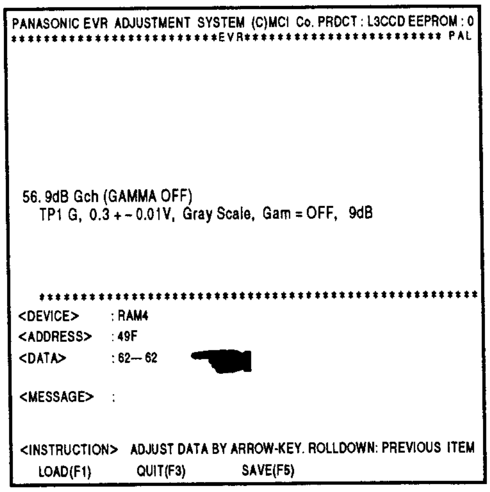
Fig. 5-65

- Press the **ENTER** key for next adjustment.

(56) Gch 9dB Level (Gamma Off) Adjustment

Test Point:	**Pin 2 of CN6 (TP2G)**	**Main Board**
	Pin 1 of CN6 (TP1G)	**Main Board**
Adjust:	**RAM4 (49F)**	**Main Board**

- The menu as shown in Table 5-60 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

56. 9dB Gch (GAMMA OFF)
   TP1 G, 0.3 + - 0.01V, Gray Scale, Gam = OFF, 9dB

*****************************************************
<DEVICE>     : RAM4
<ADDRESS>    : 49F
<DATA>       : 62— 62

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 5-60

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 2 of CN6 on the Process Circuit section of the Main Board.
- Set the Lens Iris so that the signal at the pin 2 of CN6 becomes 100 mVp-p as shown in Fig. 5-66.

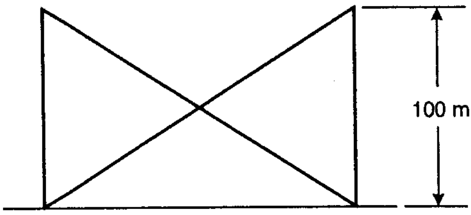


Fig. 5-66

- Change the Oscilloscope to pin 1 of CN6 on the Process Circuit section of the Main Board.
- Adjust data with the **ARROW** keys so that the signal at pin 1 of CN6 becomes 300 ± 10 mVp-p as shown in Fig. 5-67.

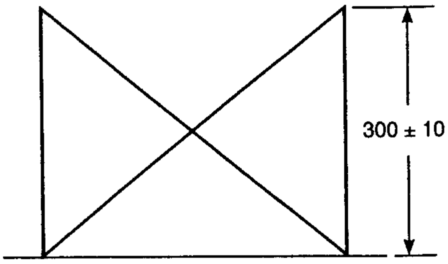


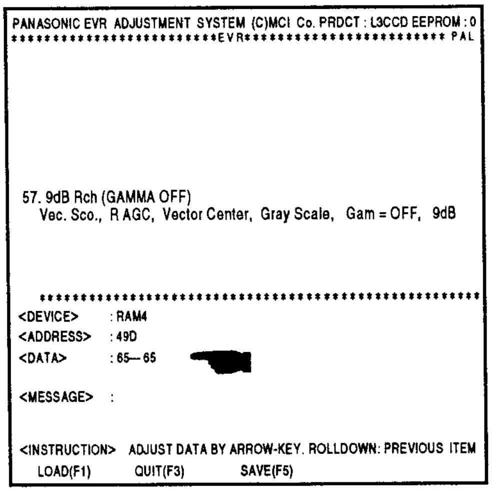
Fig. 5-67

- Press the **ENTER** key for next adjustment.

(57) Rch 9dB Level (Gamma Off) Adjustment

Test Point:	**Pin 2 of CN6 (TP2G)**	**Main Board**
	Video Out Connector 1	**Rear Panel**
Adjust:	**RAM4 (49D)**	**Main Board**

- The menu as shown in Table 5-61 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

57. 9dB Rch (GAMMA OFF)
   Vec. Sco., R AGC, Vector Center, Gray Scale, Gam = OFF, 9dB

*****************************************************
<DEVICE>     : RAM4
<ADDRESS>    : 49D
<DATA>       : 65— 65

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 5-61

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 2 of CN6 on the Process Circuit section of the Main Board.
- Set the Lens Iris so that the signal at the pin 2 of CN6 becomes 100 mVp-p as shown in Fig. 5-68.

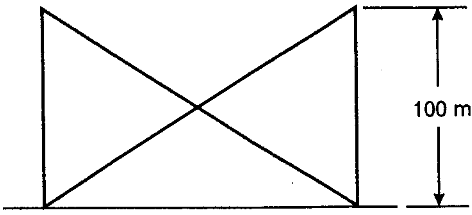


Fig. 5-68

- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-69.

Positioned at center.

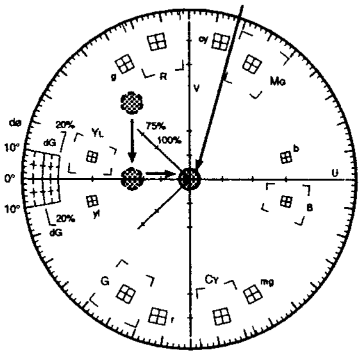


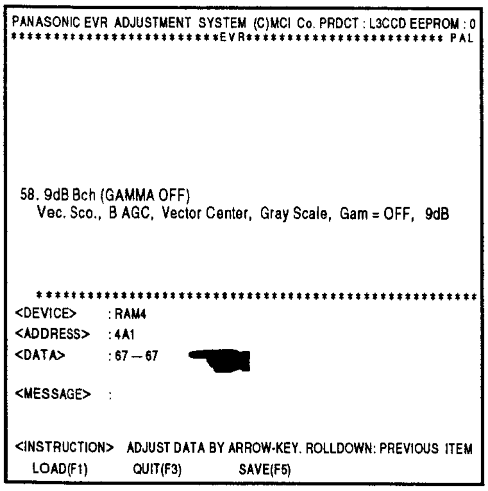
Fig. 5-69

- Press the **ENTER** key for next adjustment.

(58) Bch 9dB Level (Gamma Off) Adjustment

Test Point:	**Pin 2 of CN6 (TP2G)**	**Main Board**
	Video Out Connector 1	**Rear Panel**
Adjust:	**RAM4 (4A1)**	**Main Board**

- The menu as shown in Table 5-62 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
************************EVR************************ PAL


58. 9dB Bch (GAMMA OFF)
   Vec. Sco., B AGC, Vector Center, Gray Scale, Gam = OFF, 9dB

**************************************************
<DEVICE>     : RAM4
<ADDRESS>    : 4A1
<DATA>       : 67 – 67

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-62

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 2 of CN6 on the Process Circuit section of the Main Board.
- Set the Lens Iris so that the signal at the pin 2 of CN6 becomes 100 mVp-p as shown in Fig. 5-70.

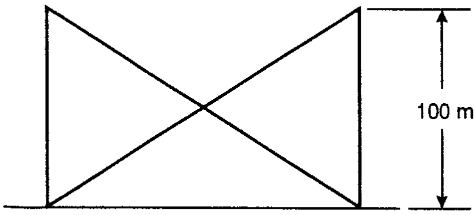


Fig. 5-70

- Set the gain of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-71.

Positioned at center.

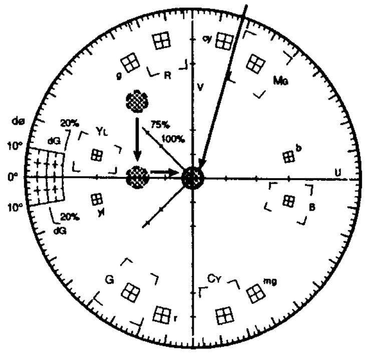


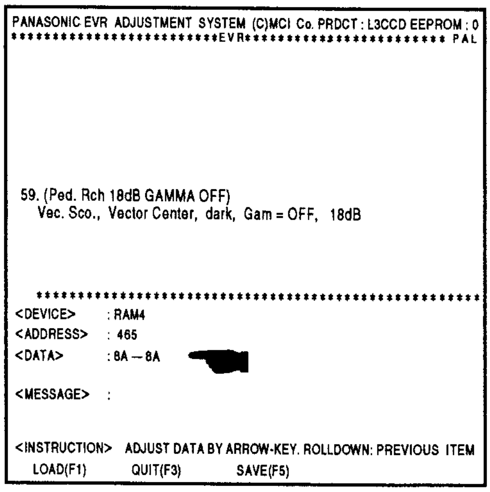
Fig. 5-71

- Press the **ENTER** key for next adjustment.

(59) Rch Pedestal 18dB (Gamma Off) Adjustment

Test Point:	**Video Out Connector 1**	**Rear Panel**
Adjust:	**RAM4 (465)**	**Main Board**

- The menu as shown in Table 5-63 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
************************EVR************************ PAL


59. (Ped. Rch 18dB GAMMA OFF)
   Vec. Sco., Vector Center, dark, Gam = OFF, 18dB

**************************************************
<DEVICE>     : RAM4
<ADDRESS>    : 465
<DATA>       : 8A – 8A

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)        SAVE(F5)
```

Table 5-63

- Set the Automatic/Manual Gain Selection Switch to HIGH position.
- Cap on the Lens.
- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-72.

Positioned at center.

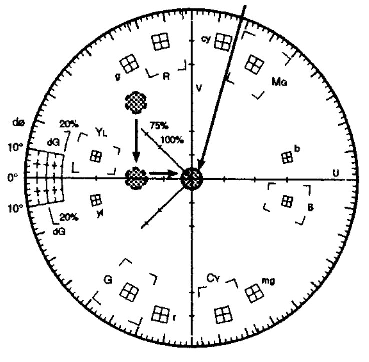


Fig. 5-72

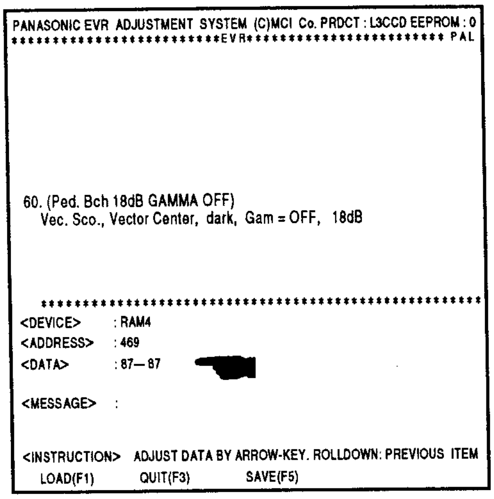
- Press the **ENTER** key for next adjustment.

(60) Bch Pedestal 18dB (Gamma Off) Adjustment

Test Point: **Video Out Connector 1** **Rear Panel**

Adjust: **RAM4 (469)** **Main Board**

- The menu as shown in Table 5-64 will be displayed.



```
PANASONIC EVR  ADJUSTMENT  SYSTEM  (C)MCI  Co. PRDCT : L3CCD EEPROM : 0
***************************EVR************************** PAL




 60. (Ped. Bch 18dB GAMMA OFF)
    Vec. Sco., Vector Center,  dark,  Gam = OFF,   18dB



   ****************************************************
<DEVICE>       : RAM4
<ADDRESS>      : 469
<DATA>         : 87— 87

<MESSAGE>      :

<INSTRUCTION>   ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS  ITEM
   LOAD(F1)        QUIT(F3)          SAVE(F5)
```

Table 5-64

- Cap on the Lens.
- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-73.

Positioned at center.

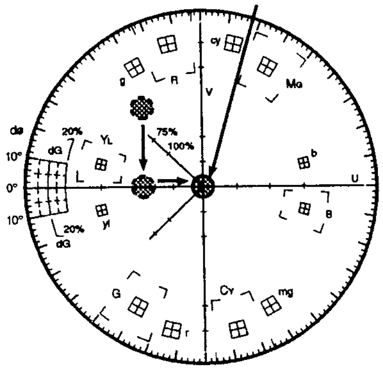


Fig. 5-73

- Press the **ENTER** key for next adjustment.

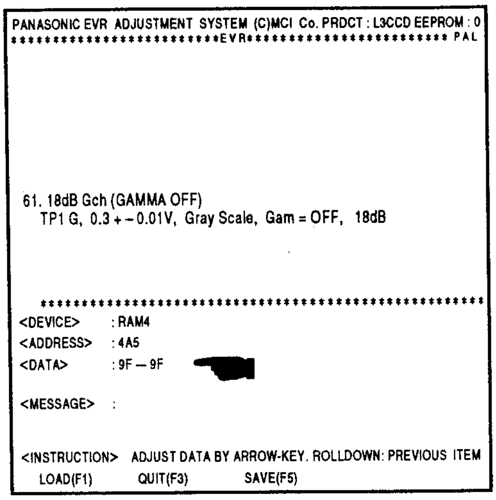
(61) Gch 18dB Level (Gamma Off) Adjustment

Test Point: **Pin 2 of CN6 (TP2G)** **Main Board**

Pin 1 of CN6 (TP1G) **Main Board**

Adjust: **RAM4 (4A5)** **Main Board**

- The menu as shown in Table 5-65 will be displayed.



```
PANASONIC EVR  ADJUSTMENT  SYSTEM  (C)MCI  Co. PRDCT : L3CCD EEPROM : 0
***************************EVR************************** PAL




 61. 18dB Gch (GAMMA OFF)
    TP1 G,  0.3 + – 0.01V,  Gray Scale,  Gam = OFF,   18dB



   ****************************************************
<DEVICE>       : RAM4
<ADDRESS>      : 4A5
<DATA>         : 9F — 9F

<MESSAGE>      :

<INSTRUCTION>   ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS  ITEM
   LOAD(F1)        QUIT(F3)          SAVE(F5)
```

Table 5-65

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 2 of CN6 on the Process Circuit section of the Main Board.
- Set the Lens Iris so that the signal at the pin 2 of CN6 becomes 36 mVp-p as shown in Fig. 5-74.

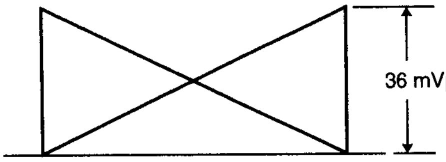


Fig. 5-74

- Change the Oscilloscope to pin 1 of CN6 on the Process Circuit section of the Main Board.
- Adjust data with the **ARROW** keys so that the signal at pin 1 of CN6 becomes 300 ± 10 mVp-p as shown in Fig. 5-75.

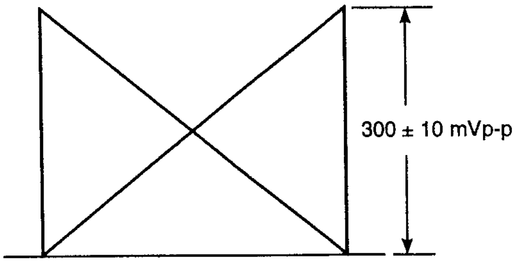


Fig. 5-75

- Press the **ENTER** key for next adjustment.

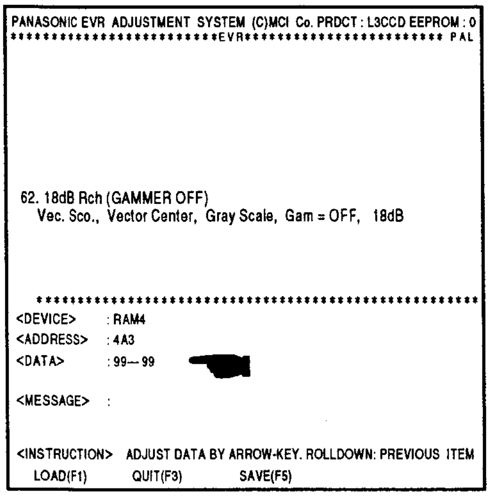
(62) Rch 18dB Level (Gamma Off) Adjustment

Test Point: **Pin 2 of CN6 (TP2G)** **Main Board**

Video Out Connector 1 **Rear Panel**

Adjust: **RAM4 (4A3)** **Main Board**

- The menu as shown in Table 5-66 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

62. 18dB Rch (GAMMER OFF)
   Vec. Sco., Vector Center, Gray Scale, Gam = OFF, 18dB

   **************************************************
<DEVICE>     : RAM4
<ADDRESS>    : 4A3
<DATA>       : 99—99

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 5-66

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 2 of CN6 on the Process Circuit section of the Main Board.
- Set the Lens Iris so that the signal at the pin 2 of CN6 becomes 36 mVp-p as shown in Fig. 5-76.

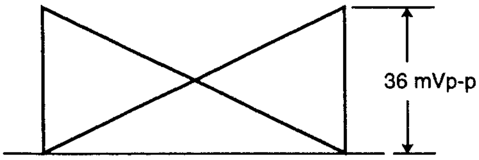


Fig. 5-76

- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-77.

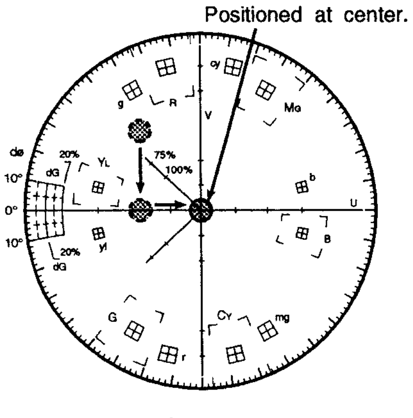


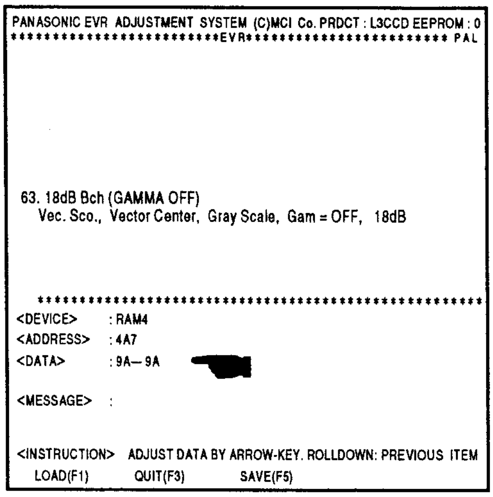
Fig. 5-77

- Press the **ENTER** key for next adjustment.

(63) Bch 18dB Level (Gamma Off) Adjustment

Test Point:	**Pin 2 of CN6 (TP2G)**	**Main Board**
	Video Out Connector 1	**Rear Panel**
	Adjust:RAM4 (4A7)	**Main Board**

- The menu as shown in Table 5-67 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************* PAL

63. 18dB Bch (GAMMA OFF)
   Vec. Sco., Vector Center, Gray Scale, Gam = OFF, 18dB

   **************************************************
<DEVICE>     : RAM4
<ADDRESS>    : 4A7
<DATA>       : 9A—9A

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)       QUIT(F3)       SAVE(F5)
```

Table 5-67

- Aim the Camera at the Logarithmic Gray Scale Chart.
- Connect the Oscilloscope to pin 2 of CN6 on the Process Circuit section of the Main Board.
- Set the Lens Iris so that the signal at the pin 2 of CN6 becomes 36 mVp-p as shown in Fig. 5-78.

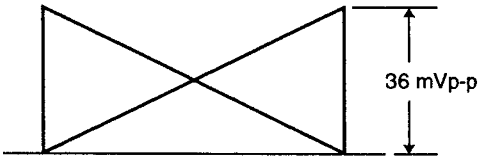


Fig. 5-78

- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-79.

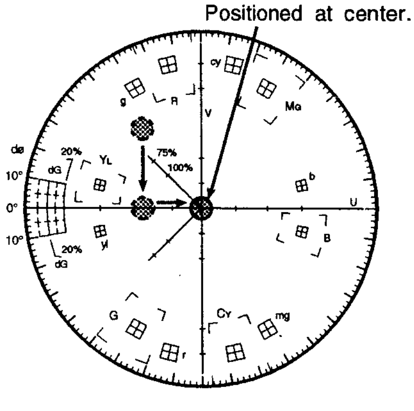


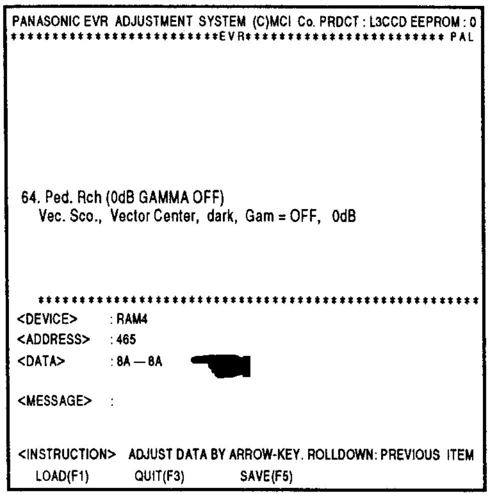
Fig. 5-79

- Press the **ENTER** key for next adjustment.

(64) Rch Pedestal 0dB (Gamma Off) Adjustment

Test Point:	**Video Out Connector 1**	**Rear Panel**
Adjust:	**RAM4 (465)**	**Main Board**

- The menu as shown in Table 5-68 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************ PAL


 64. Ped. Rch (0dB GAMMA OFF)
   Vec. Sco., Vector Center, dark, Gam = OFF, 0dB


 *****************************************************
<DEVICE>     : RAM4
<ADDRESS>    : 465
<DATA>       : 8A — 8A

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
    LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 5-68

- Set the Automatic/Manual Gain Selection Switch to OFF position.
- Cap on the Lens.
- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-80.

Positioned at center.

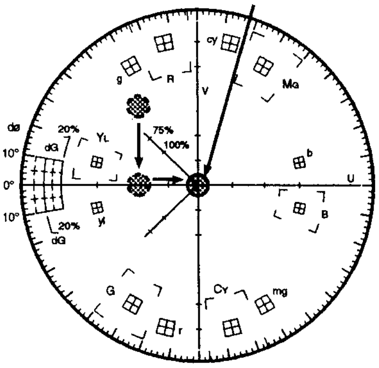


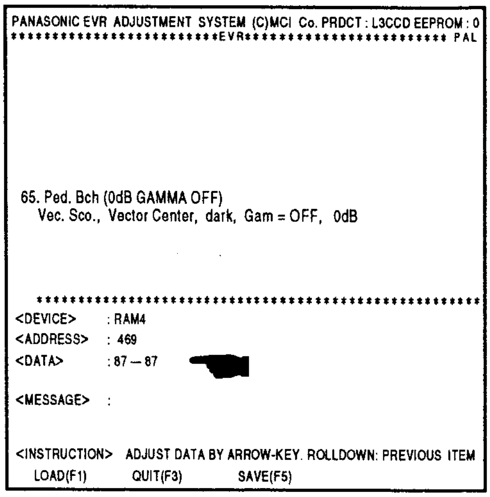
Fig. 5-80

- Press the **ENTER** key for next adjustment.

(65) Bch Pedestal 0dB (Gamma Off) Adjustment

Test Point:	**Video Out Connector 1**	**Rear Panel**
Adjust:	**RAM4 (469)**	**Main Board**

- The menu as shown in Table 5-69 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************ PAL


 65. Ped. Bch (0dB GAMMA OFF)
   Vec. Sco., Vector Center, dark, Gam = OFF, 0dB


 *****************************************************
<DEVICE>     : RAM4
<ADDRESS>    : 469
<DATA>       : 87 — 87

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
    LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 5-69

- Cap on the Lens.
- Set the Gain Control of the Vectorscope to maximum.
- Adjust data with the **ARROW** keys so that the vector positions at center of the Vectorscope as shown in Fig. 5-81.

Positioned at center.

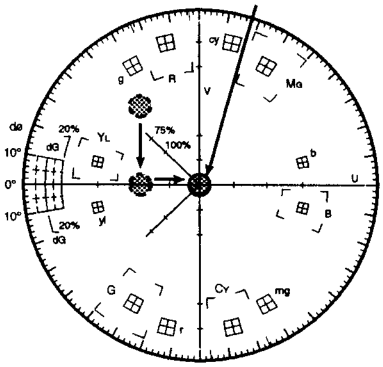
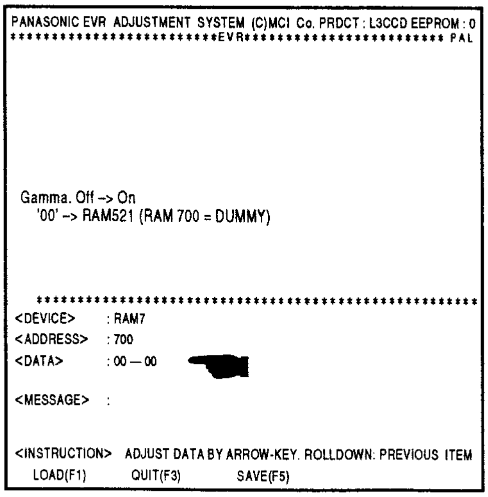


Fig. 5-81

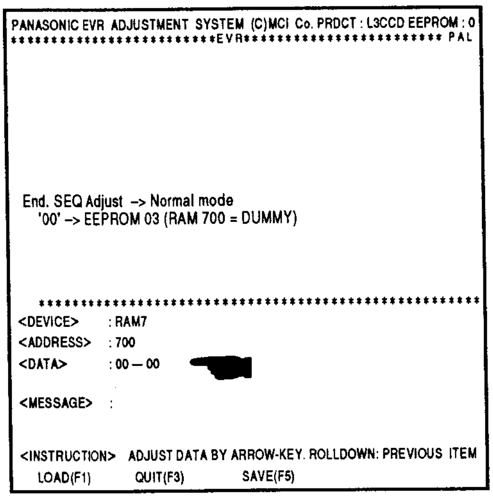
- Press the **ENTER** key for next adjustment, the menu as shown in Table 5-70 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************ PAL


 Gamma. Off -> On
   '00' -> RAM521 (RAM 700 = DUMMY)


 *****************************************************
<DEVICE>     : RAM7
<ADDRESS>    : 700
<DATA>       : 00 — 00

<MESSAGE>    :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
    LOAD(F1)        QUIT(F3)        SAVE(F5)
```

Table 5-70

- Press the **ENTER** key so that the Gamma Switch should be set to ON position automatically, the menu as shown in Table 5-71 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
************************EVR************************ PAL

End. SEQ Adjust -> Normal mode
  '00' -> EEPROM 03 (RAM 700 = DUMMY)

**************************************************
<DEVICE>    : RAM7
<ADDRESS>   : 700
<DATA>      : 00 — 00

<MESSAGE>   :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)     QUIT(F3)     SAVE(F5)
```

Table 5-71

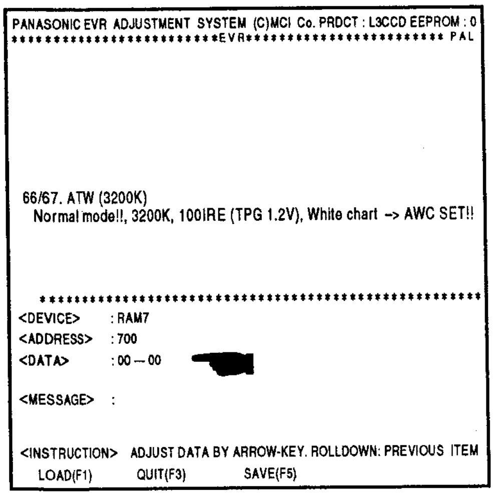
- Press the **ENTER** key so that Normal mode is selected from SEQ Adjust mode automatically.

(66/67) ATW (3,200°K) Setting

Test Point: **Pin 7 of CN6 (TPG)** **Main Board**

Adjust: **Lens Iris**

- The menu as shown in Table 5-72 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
************************EVR************************ PAL

66/67. ATW (3200K)
  Normal mode!!, 3200K, 100IRE (TPG 1.2V), White chart -> AWC SET!!

**************************************************
<DEVICE>    : RAM7
<ADDRESS>   : 700
<DATA>      : 00 — 00

<MESSAGE>   :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)     QUIT(F3)     SAVE(F5)
```

Table 5-72

- Aim the Camera at the White Chart.
- Connect the Oscilloscope to pin 7 of CN6 on the Process Circuit Section of the Main Board.
- Set the Lens Iris so that the signal level at pin 7 of CN6 becomes 1.2 ± 0.05 V as shown in Fig. 5-82.

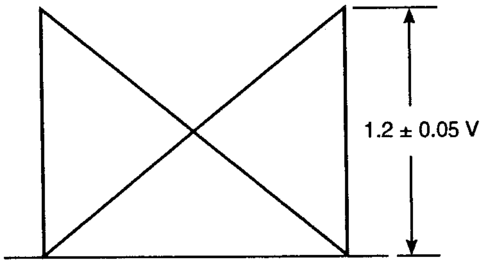


Fig. 5-82

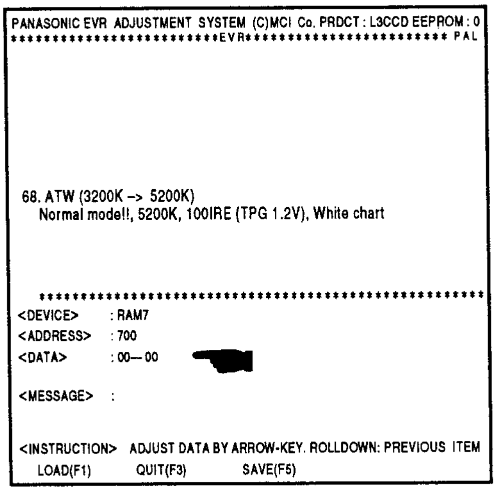
- Set the White Balance Selection Switch on the Front Panel of the Camera Control Unit to AWC position.
- Press the **ENTER** key for next step.

(68) ATW (3,200°K to 5,200°K) Setting

Test Point: **Pin 7 of CN6 (TPG)** **Main Board**

Adjust: **Lens Iris**

- The menu as shown in Table 5-73 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
************************EVR************************ PAL

68. ATW (3200K -> 5200K)
  Normal mode!!, 5200K, 100IRE (TPG 1.2V), White chart

**************************************************
<DEVICE>    : RAM7
<ADDRESS>   : 700
<DATA>      : 00— 00

<MESSAGE>   :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
  LOAD(F1)     QUIT(F3)     SAVE(F5)
```

Table 5-73

- Mount the Colour Temperature Conversion Filter on the Lens.
- Aim the Camera at the White Chart.
- Connect the Oscilloscope to pin 7 of CN6 on the Process Circuit Section of the Main Board.
- Set the Lens Iris so that the signal level at pin 7 of CN6 becomes 1.2 ± 0.05 V as shown in Fig. 5-83.

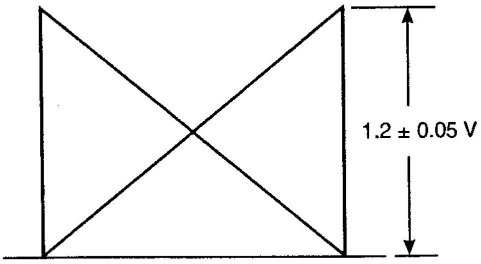
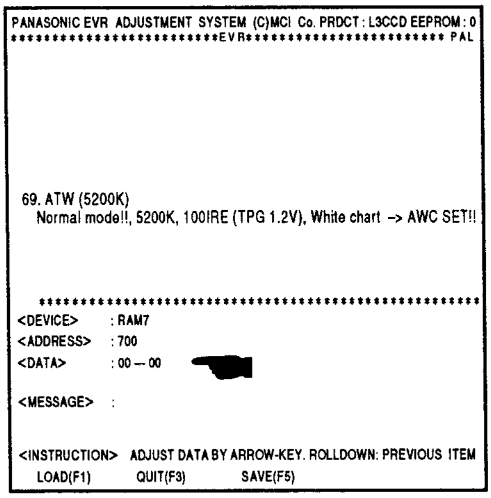


Fig. 5-83

- Press the **ENTER** key for next step.

(69) ATW (5,200°K) Setting

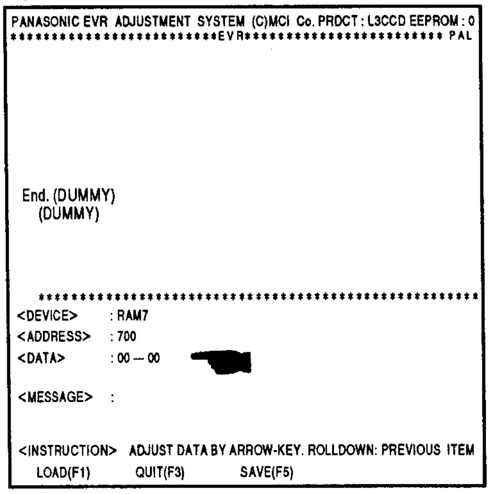
- The menu as shown in Table 5-74 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************ PAL

69. ATW (5200K)
   Normal mode!!, 5200K, 100IRE (TPG 1.2V), White chart -> AWC SET!!

   ****************************************************
<DEVICE>      : RAM7
<ADDRESS>     : 700
<DATA>        : 00 — 00

<MESSAGE>   :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)        QUIT(F3)          SAVE(F5)
```

Table 5-74

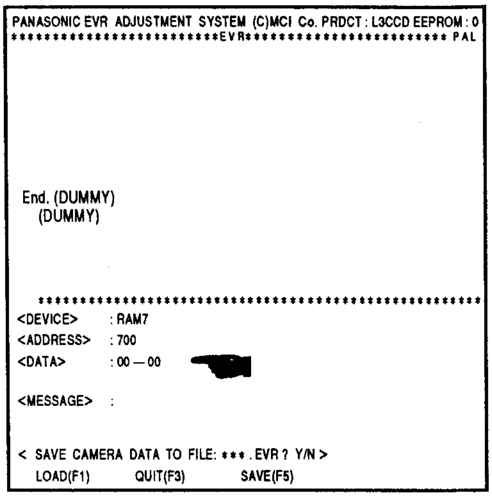
- Mount the Color Temperature Conversion Filter on the Lens.
- Aim the Camera at the White Chart.
- Set the White Balance Selection Switch on the Front Panel of the Camera Control Unit to AWC position.
- Press the **ENTER** key for next step, the menu as shown in Table 5-75 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************ PAL

 End. (DUMMY)
    (DUMMY)

   ****************************************************
<DEVICE>      : RAM7
<ADDRESS>     : 700
<DATA>        : 00 — 00

<MESSAGE>   :

<INSTRUCTION>  ADJUST DATA BY ARROW-KEY. ROLLDOWN: PREVIOUS ITEM
   LOAD(F1)        QUIT(F3)          SAVE(F5)
```

Table 5-75

- After finishing the adjustment, press the **QUIT (F3)** key, Table 5-76 will be displayed.



```
PANASONIC EVR ADJUSTMENT SYSTEM (C)MCI Co. PRDCT : L3CCD EEPROM : 0
*************************EVR************************ PAL

 End. (DUMMY)
    (DUMMY)

   ****************************************************
<DEVICE>      : RAM7
<ADDRESS>     : 700
<DATA>        : 00 — 00

<MESSAGE>   :

< SAVE CAMERA DATA TO FILE: ***.EVR ? Y/N >
   LOAD(F1)        QUIT(F3)          SAVE(F5)
```

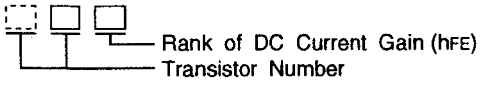
Table 5-76

- Press the **N** and **ENTER** keys to finish.
- Disconnect the cable from CN5 on the Process Circuit section of the Main Board of the Camera Control Unit.

CHIP COMPONENTS

1. Chip Transistor

The transistor number is indicated on the top surface of the chip transistor using two alphabet letters or one numerical number and two alphabet letters.



Transistor Number

(Chip Transistor)

Letter	Transistor No.	Letter	Transistor No.
A	2SB709	X	2SD602A
B	2SB709A	Y	2SD601
C	2SB710	Z	2SD601A
D	2SB710A	1A	2SB799
E	2SA1022	1B	2SB814
F	2SA1034	1C	2SB902
H	2SA1035	1F	2SK321
I	2SB792	1K	2SK316
K	2SC2778	1L	2SK247
P	2SD814	1M	2SJ84
Q	2SD813	1N	2SK199
R	2SC2480	1O	2SK198
S	2SC2405	1T	2SC3077
T	2SC2406	1X	2SC2845
U	2SC2404	1Z	2SD1030
V	2SC2295	2B	2SK374
W	2SD602	2C	2SK116
BQ	2SB766A	UMT	2SC4081

(Small Chip Transistor)

Letter	Transistor No.
A	2SB1218
B	2SB1218A
D	2SB1219A
U	2SC3931
W	2SD1820
X	2SD1820A
Y	2SD1819
E3	2SA1226
OS	2SB1219
UC	2SA1532
YU	2SC3938

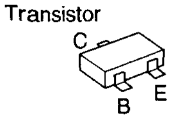
(Pair Transistor)

Letter	Transistor No.	Letter	Transistor No.
5R	XN1501	5H	XP4501
7S	XN1601	5C	XP4601
5H	XN4501	5H	XP4501
5C	XN4601	5L	XP5501
5L	XN5501	4N	XP5601
4N	XN5601	7S	XP6501
5N	XN6501	7W	XP6435
7W	XN6435	7F	XP6534
7F	XN6534	X1	UMX1
5R	XP1501	Z1	UMZ1
7S	XP1601		

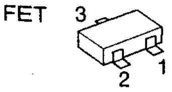
Example:

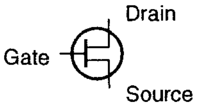
WQ → 2SD602-Q
YQ → 2SD601-Q
1BS → 2SB814-S

Appearance and Symbols



C: Collector
B: Bass
E: Emitter

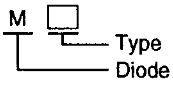




	1	2	3
Eacept 2SK199	Drain	Source	Gate
2SK199	Gate	Drain	Source

2. Chip Diode

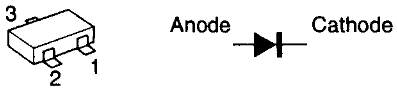
The diode number is indicated on the top surface of the chip diode using two alphabet letters.



Diode Number

	1	2	3
MA28/MA28W/MA28T	–	Anode	Cathode
MA151K/MA152K	–	Anode	Cathode
MA151A/MA152A	–	Cathode	Anode
MA151WK/MA152WK	Anode	Anode	Cathode
MA151WA/MA152WA	Cathode	Cathode	Anode
MA153	Cathode	Anode	Common
MA141K	–	Anode	Cathode
MA143	Anode	Cathode	Common
MA3062	Anode	–	Cathode
RD421D	Anode	–	Cathode

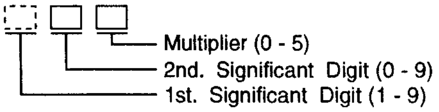
Appearance and Symbol



	1	2	3
MA28/MA28W/MA28T	–	Anode	Cathode
MA151K/MA152K	–	Anode	Cathode
MA151A/MA152A	–	Cathode	Anode
MA151WK/MA152WK	Anode	Anode	Cathode
MA151WA/MA152WA	Cathode	Cathode	Anode
MA153	Cathode	Anode	Common
MA141K	–	Anode	Cathode
MA143	Anode	Cathode	Common
MA3062	Anode	–	Cathode
RD421D	Anode	–	Cathode

3. Chip Resistor

The resistor value is indicated on the bottom surface of the chip resistor using three digit numbers.


Multiplier (0 - 5)
2nd. Significant Digit (0 - 9)
1st. Significant Digit (1 - 9)

Example:

330 → $33 \times 10^0 = 33\,\Omega$
561 → $56 \times 10^1 = 560\,\Omega$
123 → $12 \times 10^3 = 12\,k\Omega$

Note: Zero ohm resistor (jumper chip) is colored red or green.

4. Chip Capacitor

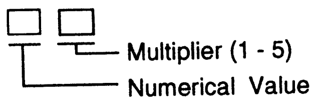
The capacitive value of replacement chip capacitors is indicated on the bottom surface. original parts do not have value indication.

If the capacitive value is less than 100 pF, the value will be indicated by one or two digit number expressing the capacity directly in pF.

Example:

0.5 →	0.5 pF	2.5 →	2.5 pF
.75 →	0.75 pF	33 →	33 pF
1 →	1 pF	82 →	82 pF

If the capacitive value is 100 pF or greater, the value will be indicated by an alpha-numeric code. The letter precedes the number and expresses a numerical value to be multiplied by the number which follows.


Multiplier (1 - 5)
Numerical Value

Numerical Value

Letter	Value	Letter	Value
A	10	N	33
B	11	P	36
C	12	Q	39
D	13	R	43
E	15	S	47
F	16	T	51
G	18	U	56
H	20	V	62
J	22	W	68
K	24	X	75
L	27	Y	82
M	30	Z	91

* Letters I and O are not used.

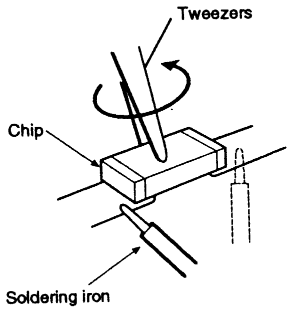
Example: A1 → 10×10^1 = 100 pF
N2 → 33×10^2 = 3300 pF
S3 → 47×10^3 = 47000 pF

5. Precautions in replacing the chip component

1. Make sure that the unit is turned OFF when replacing the chip.
2. Use tweezers to prevent any damage to the chip surface.
3. Do not re-use the chips after removal.
4. Do not rub the electrode of chips.
5. Do not subject the chips to excessive stress.
6. It is recommended that a pencil-type soldering iron to be used.
7. The solder whose diameter is less than 0.5 mm is recommended.
8. Do not heat the chip beyond 3 second.
9. Maintain temperature control under 260°C (500°F) when soldering.

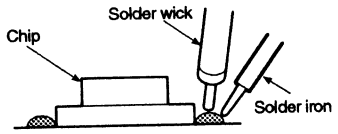
5-1 Removal (Transistor, Diode, Resistor and Capacitor)

1. Add the solder to both ends of the chip (three leads for chip transistor).
2. While attaching the sokdering iron to both ends of the chip (three leads for chip transistor) as shown below, remove the chip by turning with tweezers.
Note: Be careful not to damage other chips.

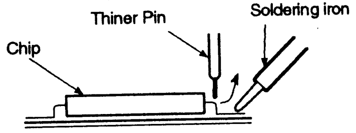

Tweezers
Chip
Soldering iron

5-2 Removal (IC)

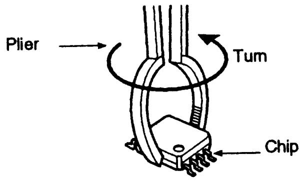
1. Add the solder wick and soldering iron to each lead of the IC and remove solder.


Solder wick
Chip
Solder iron

2. Add the soldering iron to each lead of the IC and left each lead of the IC using thiner pin.

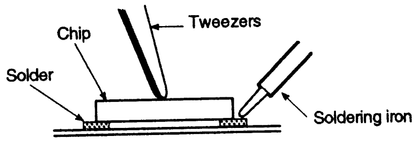

Thiner Pin
Soldering iron
Chip

3. Remove IC turning it with plier.

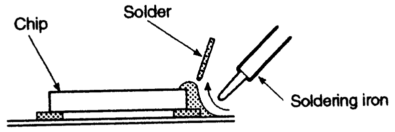

Plier
Turn
Chip

5-3 Mounting

1. Place the solder thinly on the chip mounting foil.
2. Solder the chip temporarily while holding the chip with the tweezers.

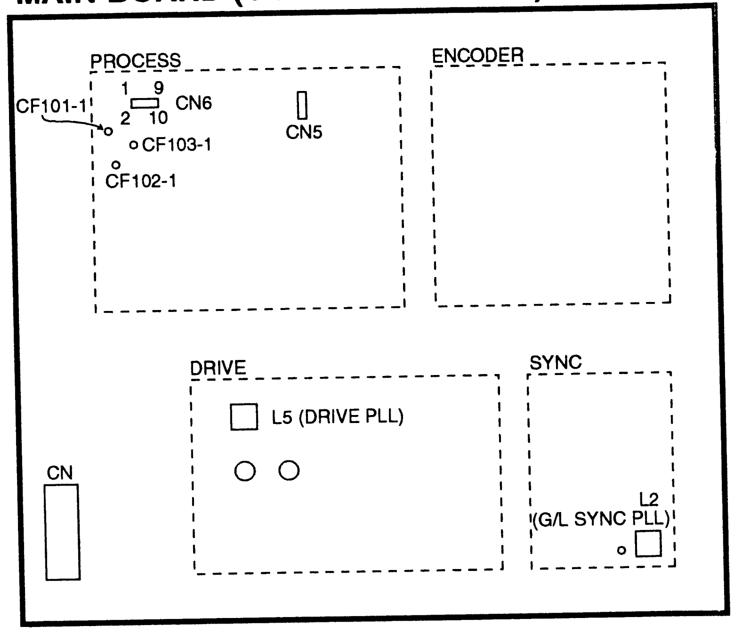

Chip
Tweezers
Solder
Soldering iron

3. Solder both ends of chip (three leads for chip transistor).

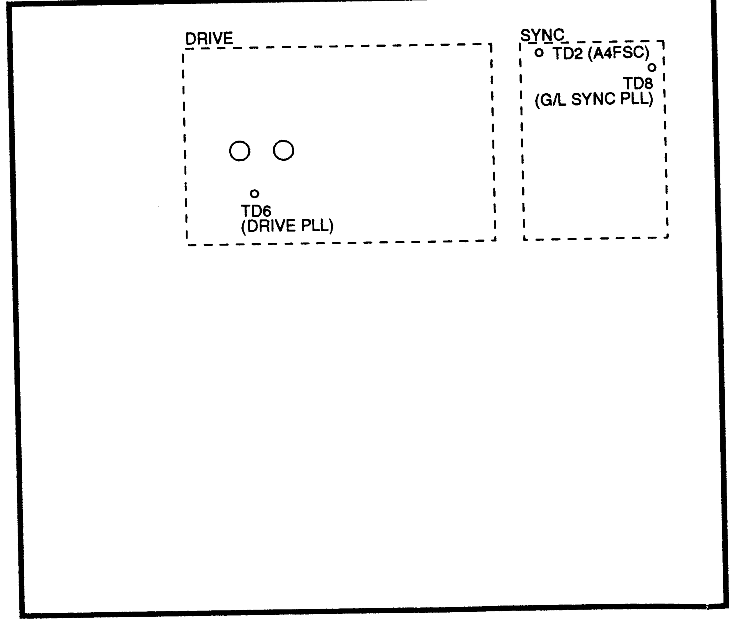

Chip
Solder
Soldering iron

LOCATION OF TEST POINTS AND ADJUSTING CONTROLS

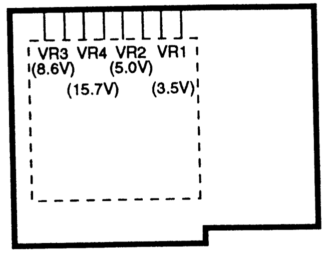
MAIN BOARD (COMPONENT SIDE)


PROCESS
ENCODER
CF101-1
1
9
2
10
CN6
CN5
CF103-1
CF102-1
DRIVE
L5 (DRIVE PLL)
SYNC
L2
(G/L SYNC PLL)
CN

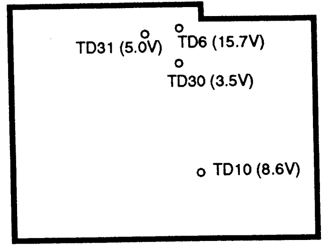
MAIN BOARD (PATTERN SIDE)


DRIVE
TD6
(DRIVE PLL)
SYNC
TD2 (A4FSC)
TD8
(G/L SYNC PLL)

POWER BOARD (COMPONENT SIDE)

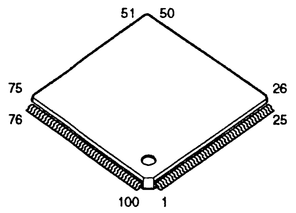

VR3
VR4
VR2
VR1
(8.6V)
(5.0V)
(15.7V)
(3.5V)

POWER BOARD (PATTERN SIDE)

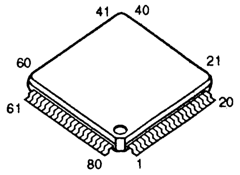

TD31 (5.0V)
TD6 (15.7V)
TD30 (3.5V)
TD10 (8.6V)

APPEARANCE OF IC, TRANSISTOR AND DIODE

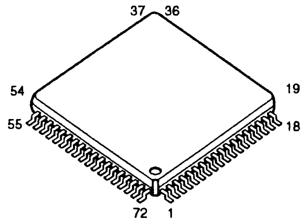
MN6734


51
50
75
26
76
25
100
1

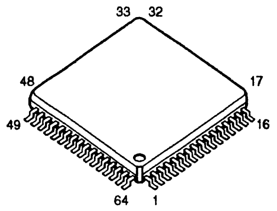
L7A0851
MN73093LBX
7702M4L284


41
40
60
21
61
20
80
1

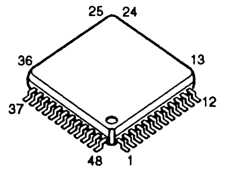
UPC2391GP


37
36
54
19
55
18
72
1

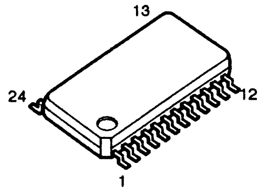
MN5197
CXD1265R


33
32
48
17
49
16
64
1

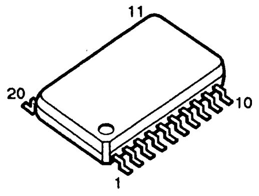
AN2254FAP
MN657011FHP


25
24
36
13
37
12
48
1

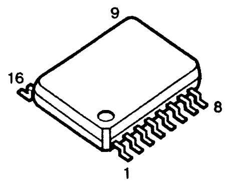
MN655431SH
BA9702F



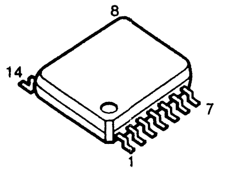
MC74HC541F SN74HC244DB
TC74AC244FSR M62366GP
TC74AC245FSR
MB88346BEF
MB90077PF104
UPD1650ZGS



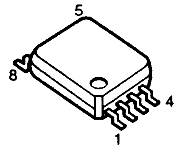
MC14053BF
MC74HC4053F
MC74HC4050FR



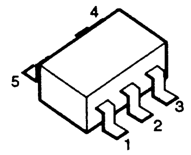
MC14066BF NJM319F
TC74AC02FSR NJM1496M
TC74AC04FSR NJM2902M
TC74AC08FSR 74AC04SC
TC74AC32FSR 74HC125PWTR
TC74AC74FSR



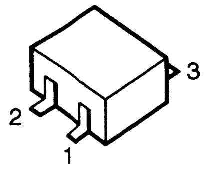
TC4W53FUR TC4W53FL
CXA1439M BA9701F
TC7W08FUR NJM2903M
AK6420F NJM2904M
TC4W66FUR NJM3414M
LM1881



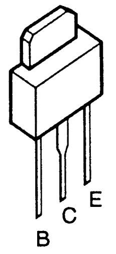
YWC7S00FUR
YWC7S02FUR
YWC7S04FUR
YWC7S08FUR
YWC7S66FUR
YWC7SU04FUR



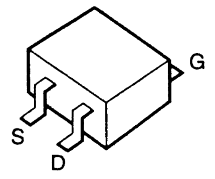
MN13821K



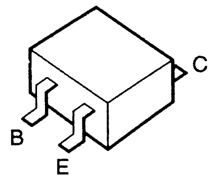
2SC1244Y



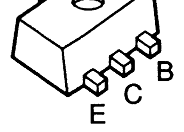
2SK662QR



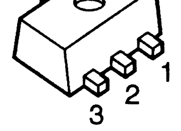
2SA1532-CD 2SB1218-QRS
2SA1462 2SB1219A-RS
2SA1424 2SB970-RS
2SC2SC3356 2SD1819-QRS
2SC3931-CD 2SD1328-RS
2SC3735 2SD1820A-QR
2SC3930-BC 2SD602-QR
FA3L4Z



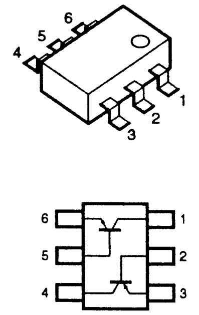
2SB1073-QR



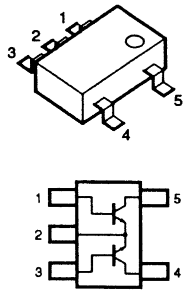
2SD874A-RS



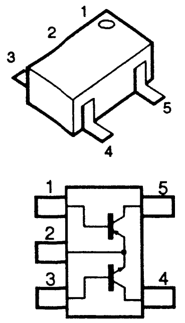
XP4501



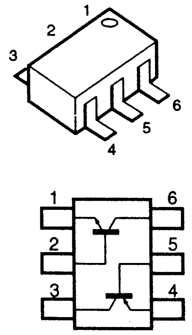
XP1501



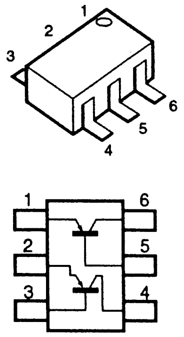
XP1601



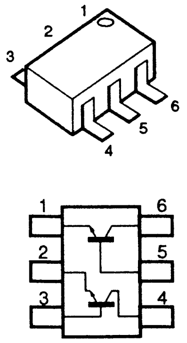
XP4601



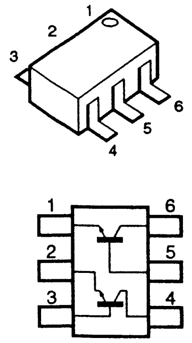
XP6401



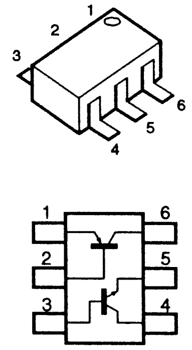
XP6501



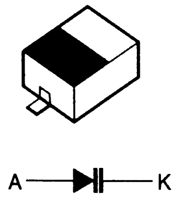
XP6534



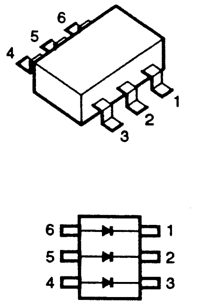
XP5601



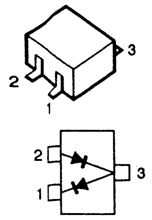
MA372



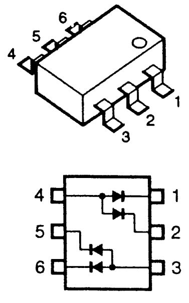
MA121



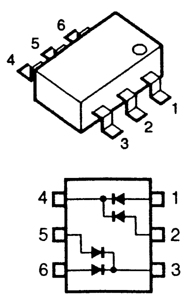
YWDA221



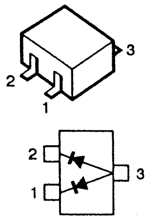
MA122



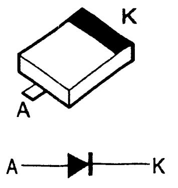
MA123



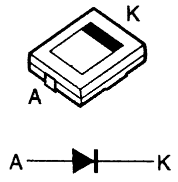
MA141WA



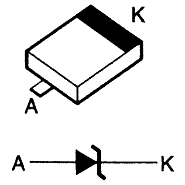
MA728
MA110
MA111



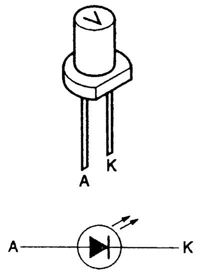
MA736



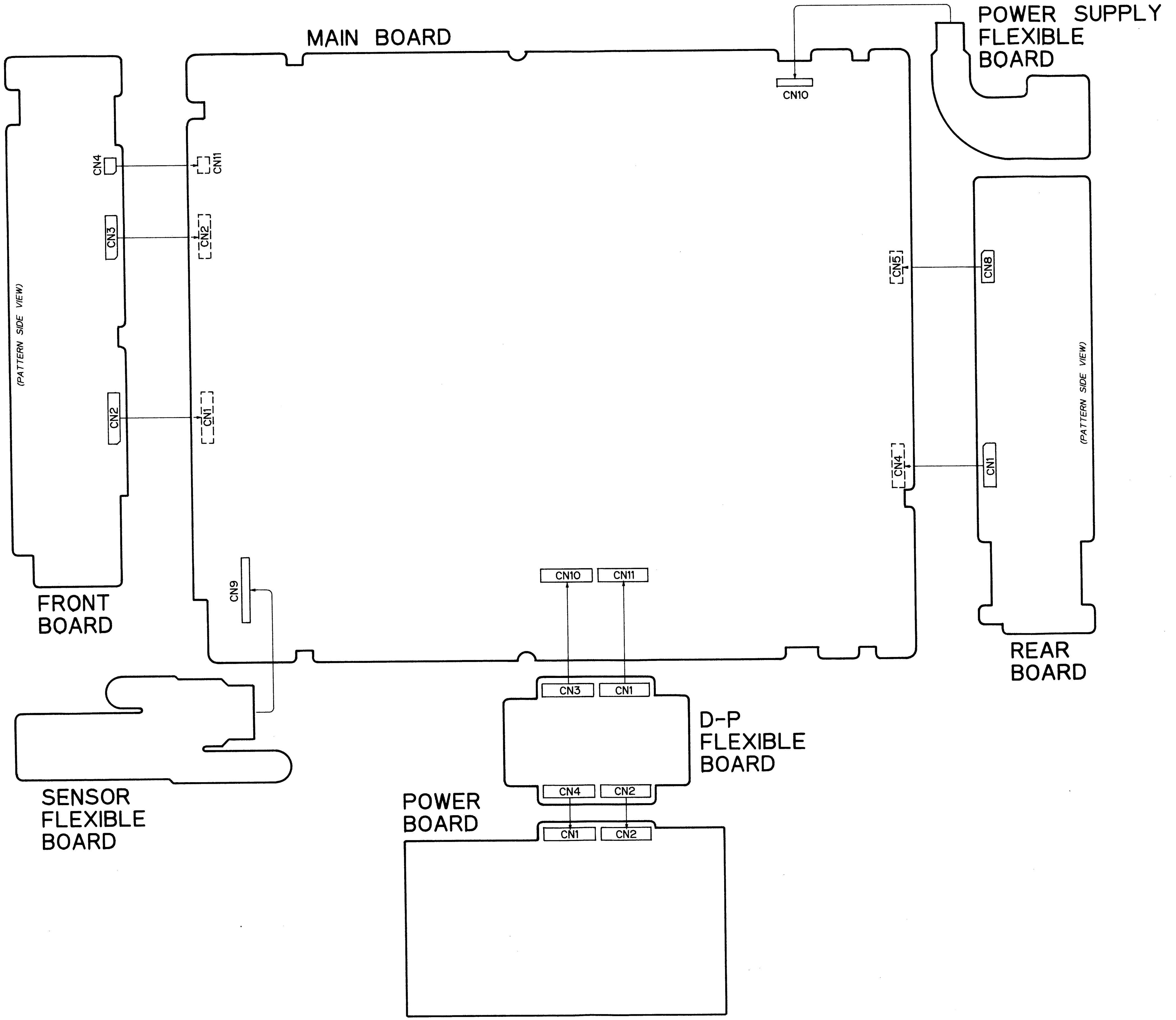
MA8075M



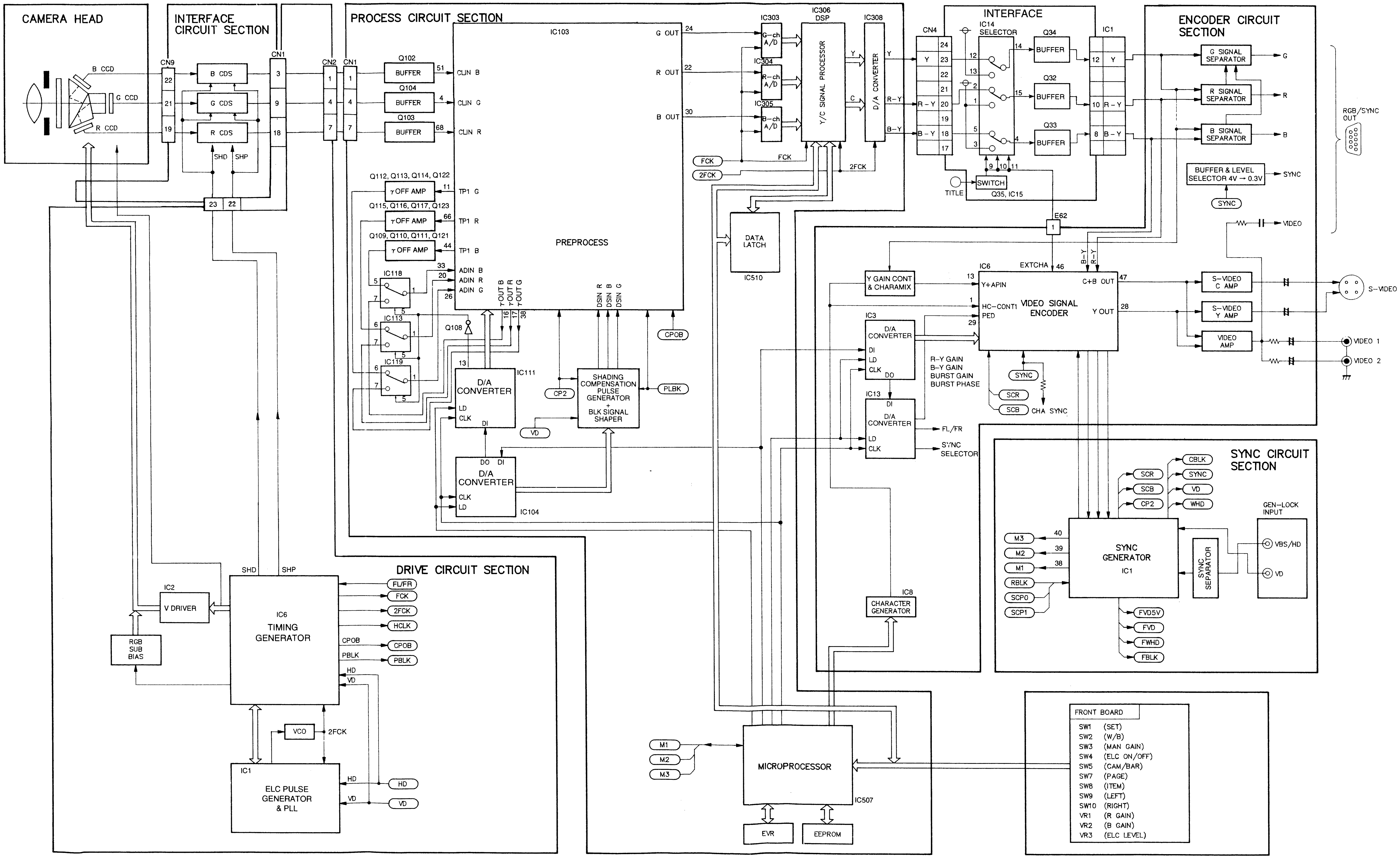
LN277RPX



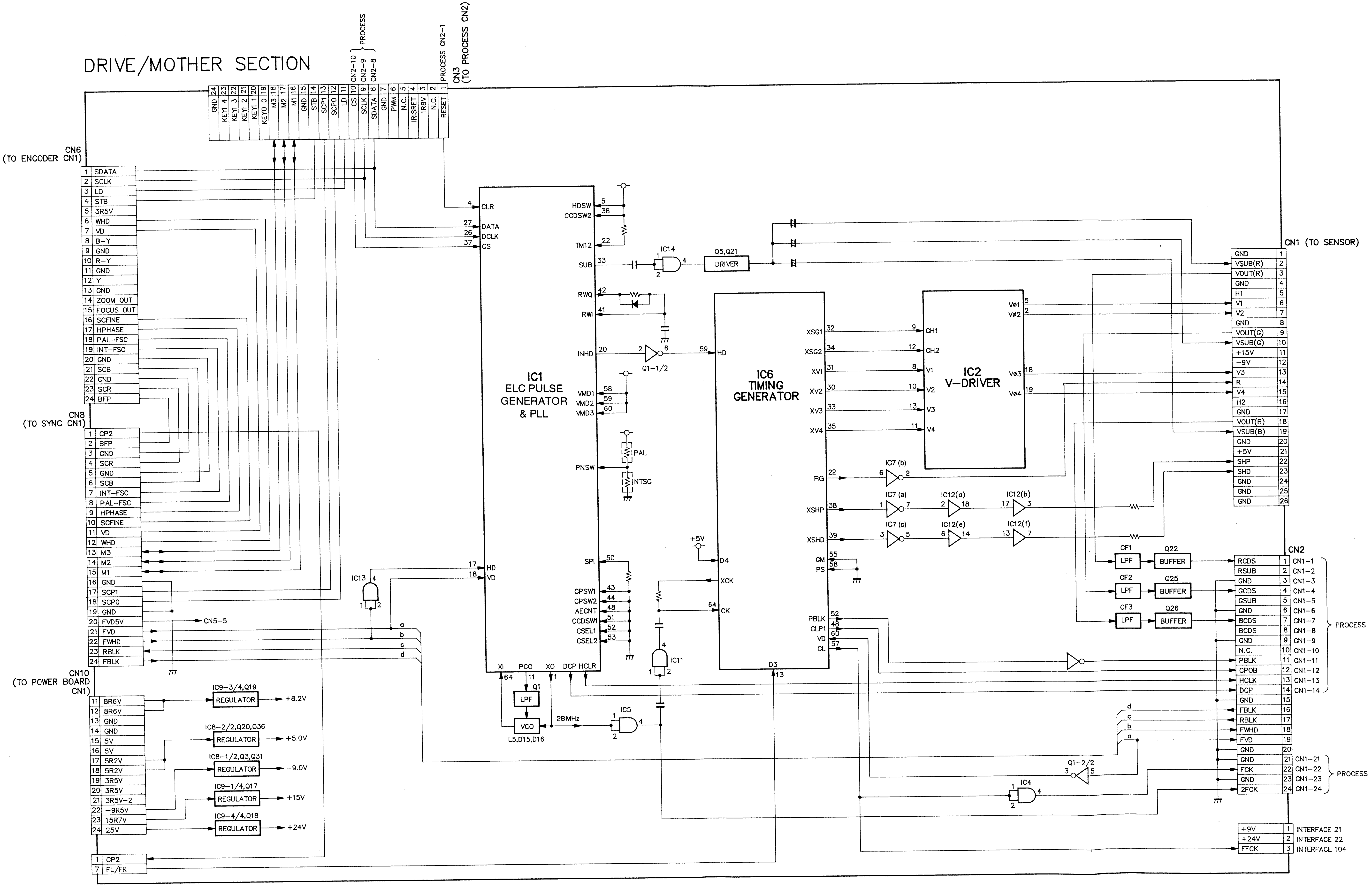
WIRING DIAGRAM


MAIN BOARD
POWER SUPPLY FLEXIBLE BOARD
CN10
FRONT BOARD
(PATTERN SIDE VIEW)
CN4
CN11
CN3
CN2
CN2
CN1
CN5
CN8
CN4
CN1
REAR BOARD
(PATTERN SIDE VIEW)
CN9
CN10
CN11
SENSOR FLEXIBLE BOARD
CN3
CN1
D-P FLEXIBLE BOARD
CN4
CN2
POWER BOARD
CN1
CN2

OVERALL BLOCK DIAGRAM

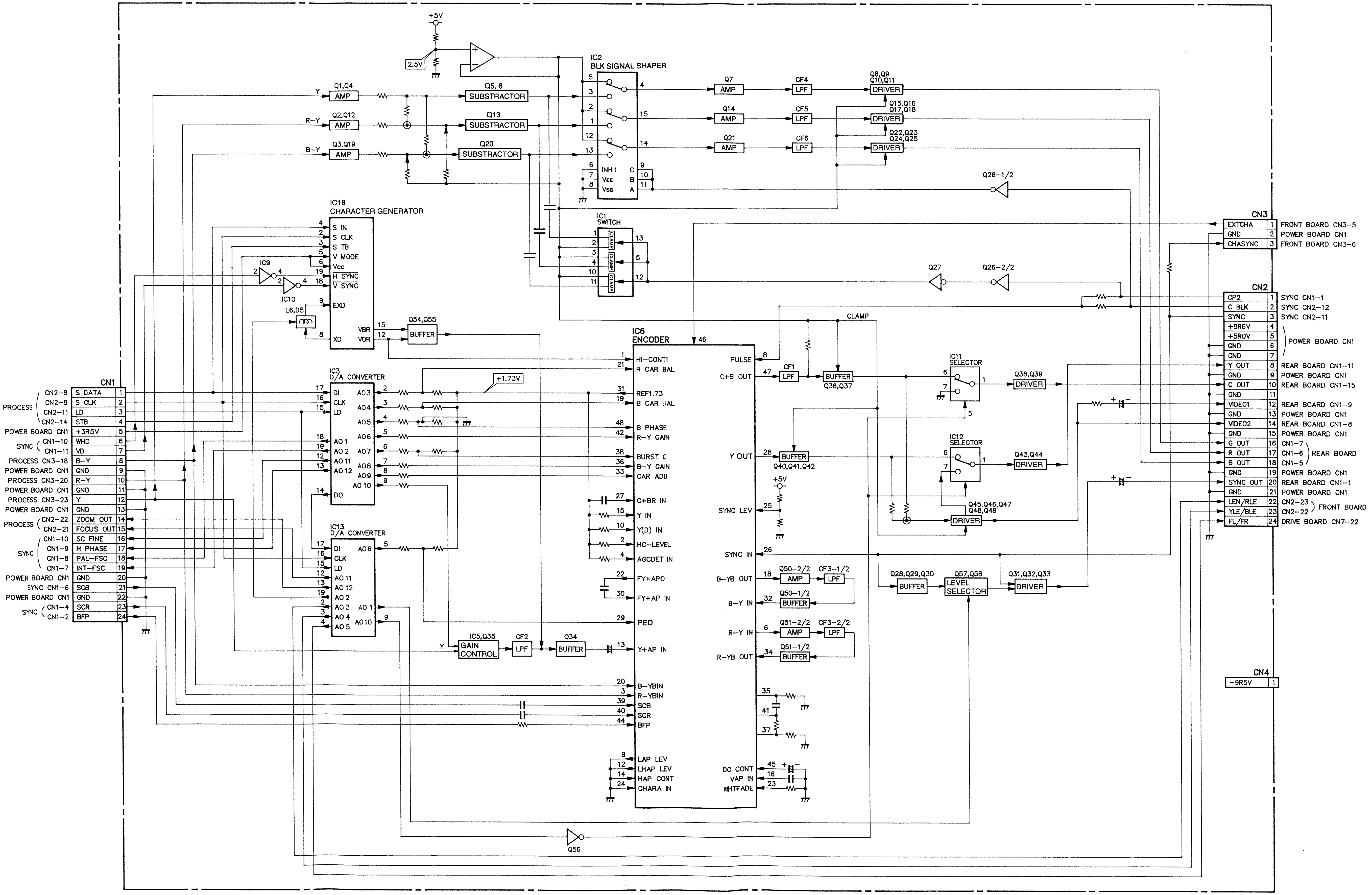

CAMERA HEAD
B CCD
G CCD
R CCD
INTERFACE CIRCUIT SECTION
CN9
CN1
B CDS
G CDS
R CDS
SHD
SHP
CN2
PROCESS CIRCUIT SECTION
IC103
Q102
BUFFER
Q104
Q103
CLIN B
CLIN G
CLIN R
G OUT
R OUT
B OUT
Q112, Q113, Q114, Q122
Q115, Q116, Q117, Q123
Q109, Q110, Q111, Q121
γOFF AMP
TP1 G
TP1 R
TP1 B
PREPROCESS
ADIN B
ADIN R
ADIN G
IC118
IC113
IC119
Q108
γOUT B
γOUT R
γOUT G
DSIN R
DSIN B
DSIN G
D/A CONVERTER
IC111
LD
CLK
DI
DO
IC104
SHADING COMPENSATION PULSE GENERATOR + BLK SIGNAL SHAPER
CP2
VD
CPOB
PLBK
IC303
G-ch A/D
IC304
R-ch A/D
IC305
B-ch A/D
IC306 DSP
Y/C SIGNAL PROCESSOR
IC308
D/A CONVERTER
FCK
2FCK
DATA LATCH
IC510
INTERFACE
CN4
IC14 SELECTOR
Q34
Q32
Q33
BUFFER
IC1
Y
R-Y
B-Y
SWITCH
TITLE
Q35, IC15
E62
ENCODER CIRCUIT SECTION
G SIGNAL SEPARATOR
R SIGNAL SEPARATOR
B SIGNAL SEPARATOR
G
R
B
RGB/SYNC OUT
BUFFER & LEVEL SELECTOR 4V → 0.3V
SYNC
VIDEO
IC6
EXTCHA
Y GAIN CONT & CHARAMIX
Y+APIN
HC-CONT1
PED
VIDEO SIGNAL ENCODER
C+B OUT
Y OUT
S-VIDEO C AMP
S-VIDEO Y AMP
VIDEO AMP
S-VIDEO
VIDEO 1
VIDEO 2
IC3
IC13
R-Y GAIN
B-Y GAIN
BURST GAIN
BURST PHASE
SCR
SCB
CHA SYNC
FL/FR
SYNC SELECTOR
SYNC CIRCUIT SECTION
CBLK
WHD
CP2
M3
M2
M1
RBLK
SCP0
SCP1
SYNC GENERATOR
IC1
SYNC SEPARATOR
GEN-LOCK INPUT
VBS/HD
FVD5V
FVD
FWHD
FBLK
IC8
CHARACTER GENERATOR
DRIVE CIRCUIT SECTION
IC2
V DRIVER
RGB SUB BIAS
IC6
TIMING GENERATOR
FL/FR
FCK
2FCK
HCLK
CPOB
PBLK
HD
VD
VCO
IC1
ELC PULSE GENERATOR & PLL
MICROPROCESSOR
IC507
EVR
EEPROM
FRONT BOARD
SW1 (SET)
SW2 (W/B)
SW3 (MAN GAIN)
SW4 (ELC ON/OFF)
SW5 (CAM/BAR)
SW7 (PAGE)
SW8 (ITEM)
SW9 (LEFT)
SW10 (RIGHT)
VR1 (R GAIN)
VR2 (B GAIN)
VR3 (ELC LEVEL)

BLOCK DIAGRAM OF MAIN BOARD (DRIVE/MOTHER SECTION)

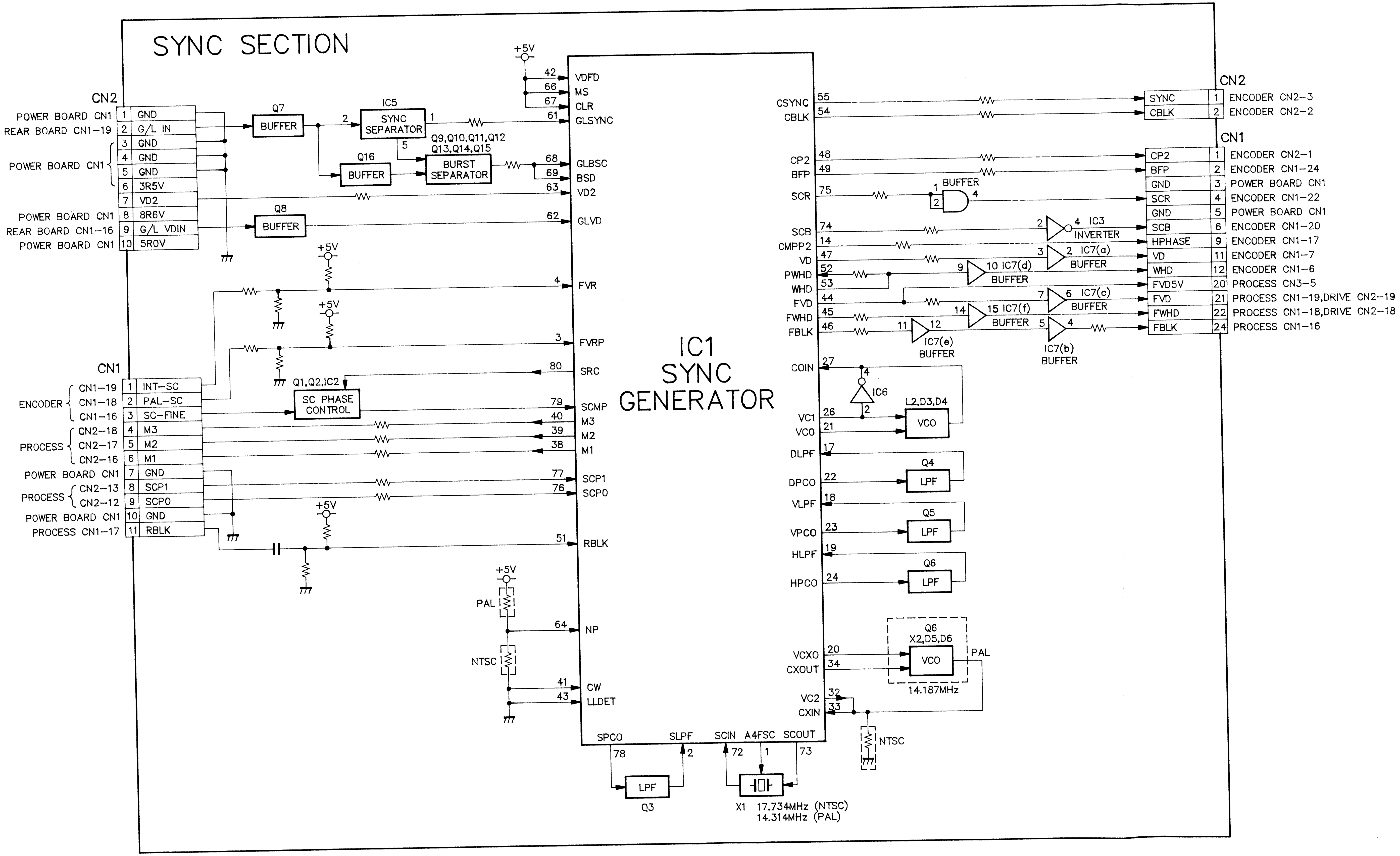

DRIVE/MOTHER SECTION
CN3 (TO PROCESS CN2)
PROCESS CN2-1
CN2-10
CN2-9
CN2-8
PROCESS
GND 24
KEY1 4 23
KEY1 3 22
KEY1 2 21
KEY1 1 20
KEYO 0 19
M3 18
M2 17
M1 16
GND 15
STB 14
SCP1 13
SCPO 12
LD 11
CS 10
SCLK 9
SDATA 8
GND 7
PWM 6
N.C. 5
IRISRET 4
1RBV 3
N.C. 2
RESET 1
CN6 (TO ENCODER CN1)
1 SDATA
2 SCLK
3 LD
4 STB
5 3R5V
6 WHD
7 VD
8 B-Y
9 GND
10 R-Y
11 GND
12 Y
13 GND
14 ZOOM OUT
15 FOCUS OUT
16 SCFINE
17 HPHASE
18 PAL-FSC
19 INT-FSC
20 GND
21 SCB
22 GND
23 SCR
24 BFP
CN8 (TO SYNC CN1)
1 CP2
2 BFP
3 GND
4 SCR
5 GND
6 SCB
7 INT-FSC
8 PAL-FSC
9 HPHASE
10 SCFINE
11 VD
12 WHD
13 M3
14 M2
15 M1
16 GND
17 SCP1
18 SCP0
19 GND
20 FVD5V
21 FVD
22 FWHD
23 RBLK
24 FBLK
CN5-5
CN10 (TO POWER BOARD CN1)
11 8R6V
12 8R6V
13 GND
14 GND
15 5V
16 5V
17 5R2V
18 5R2V
19 3R5V
20 3R5V
21 3R5V-2
22 -9R5V
23 15R7V
24 25V
1 CP2
7 FL/FR
IC9-3/4,Q19
REGULATOR
+8.2V
IC8-2/2,Q20,Q36
REGULATOR
+5.0V
IC8-1/2,Q3,Q31
REGULATOR
-9.0V
IC9-1/4,Q17
REGULATOR
+15V
IC9-4/4,Q18
REGULATOR
+24V
IC1
ELC PULSE
GENERATOR
& PLL
4 CLR
27 DATA
26 DCLK
37 CS
17 HD
18 VD
HDSW 5
CCDSW2 38
TM12 22
SUB 33
RWQ 42
RWI 41
INHD 20
VMD1 58
VMD2 59
VMD3 60
PNSW
PAL
NTSC
SPI 50
CPSW1 43
CPSW2 44
AECNT 48
CCDSW1 51
CSEL1 52
CSEL2 53
XI
PCO
XO
DCP
HCLR
64
11
1
Q1
LPF
VCO
L5,D15,D16
28MHz
IC5
IC13
IC14
Q5,Q21
DRIVER
Q1-1/2
IC11
+5V
IC6
TIMING
GENERATOR
59 HD
D4
XCK
64 CK
D3
13
XSG1 32
XSG2 34
XV1 31
XV2 30
XV3 33
XV4 35
RG 22
XSHP 38
XSHD 39
GM 55
PS 58
PBLK 52
CLP1 48
VD 60
CL 57
IC2
V-DRIVER
9 CH1
12 CH2
8 V1
10 V2
13 V3
11 V4
Vø1 5
Vø2 2
Vø3 18
Vø4 19
IC7 (b)
IC7 (a)
IC7 (c)
IC12(a)
IC12(b)
IC12(e)
IC12(f)
CF1
CF2
CF3
LPF
Q22
Q25
Q26
BUFFER
Q1-2/2
IC4
a
b
c
d
CN1 (TO SENSOR)
GND 1
VSUB(R) 2
VOUT(R) 3
GND 4
H1 5
V1 6
V2 7
GND 8
VOUT(G) 9
VSUB(G) 10
+15V 11
-9V 12
V3 13
R 14
V4 15
H2 16
GND 17
VOUT(B) 18
VSUB(B) 19
GND 20
+5V 21
SHP 22
SHD 23
GND 24
GND 25
GND 26
CN2
RCDS 1 CN1-1
RSUB 2 CN1-2
GND 3 CN1-3
GCDS 4 CN1-4
GSUB 5 CN1-5
GND 6 CN1-6
BCDS 7 CN1-7
BCDS 8 CN1-8
GND 9 CN1-9
N.C. 10 CN1-10
PBLK 11 CN1-11
CPOB 12 CN1-12
HCLK 13 CN1-13
DCP 14 CN1-14
PROCESS
GND 15
FBLK 16
RBLK 17
FWHD 18
FVD 19
GND 20
GND 21 CN1-21
FCK 22 CN1-22
GND 23 CN1-23
2FCK 24 CN1-24
PROCESS
+9V 1 INTERFACE 21
+24V 2 INTERFACE 22
FFCK 3 INTERFACE 104

BLOCK DIAGRAM OF MAIN BOARD (ENCODER SECTION)

ENCODER SECTION

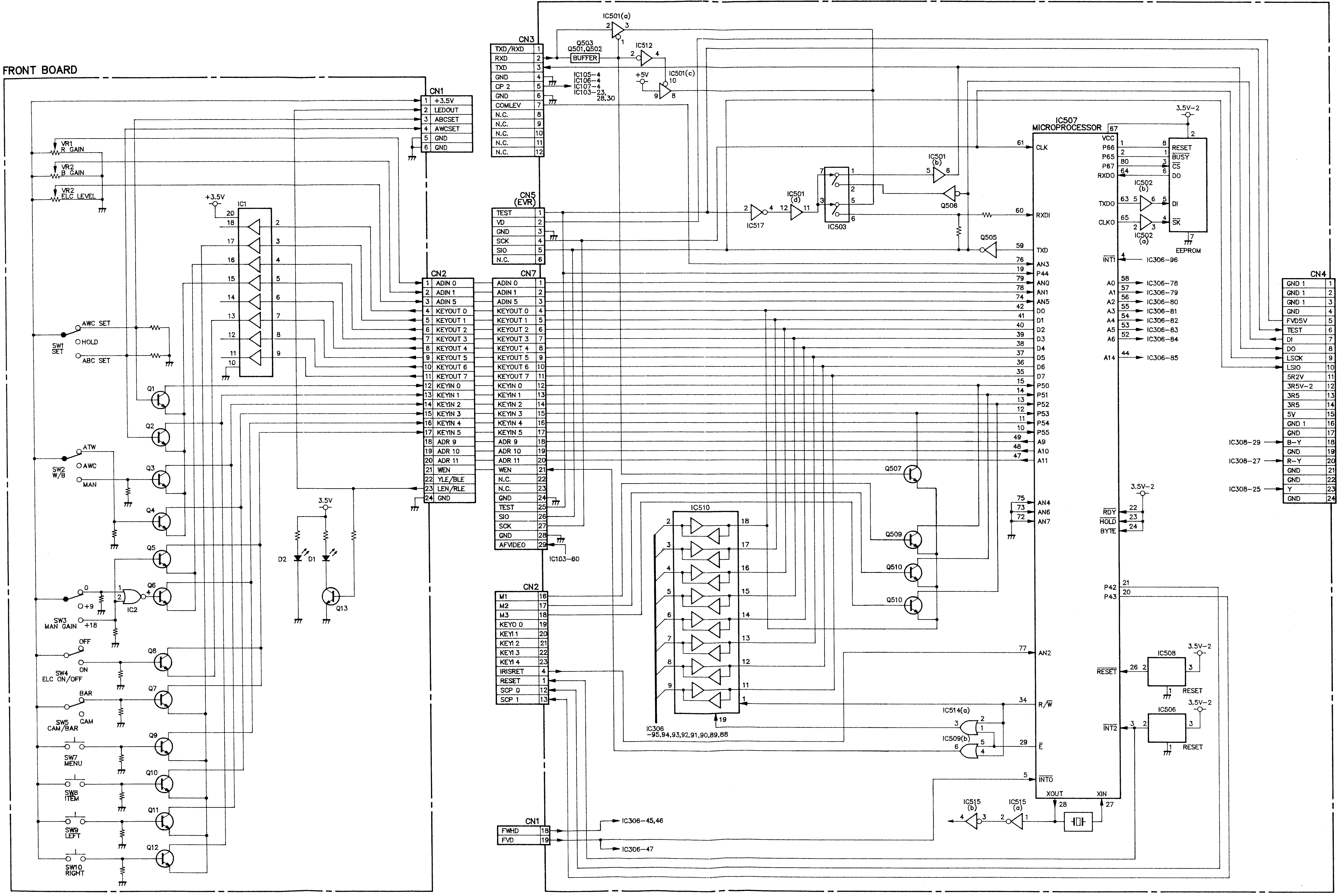

+5V
2.5V
IC2
BLK SIGNAL SHAPER
Y
Q1,Q4
AMP
Q5, 6
SUBSTRACTOR
R−Y
Q2,Q12
AMP
Q13
SUBSTRACTOR
B−Y
Q3,Q19
AMP
Q20
SUBSTRACTOR
INH 1
VEE
VSS
Q7
AMP
CF4
LPF
Q8,Q9
Q10,Q11
DRIVER
Q14
AMP
CF5
LPF
Q15,Q16
Q17,Q18
DRIVER
Q21
AMP
CF6
LPF
Q22,Q23
Q24,Q25
DRIVER
Q26−1/2
IC18
CHARACTER GENERATOR
S IN
S CLK
S TB
V MODE
Vcc
H SYNC
V SYNC
EXD
VBR
XD
VOR
IC9
IC10
L6,D5
Q54,Q55
BUFFER
IC1
SWITCH
CLAMP
Q27
Q26−2/2
CLAMP
IC6
ENCODER
HI−CONT1
R CAR BAL
REF1.73
B CAR BAL
B PHASE
R−Y GAIN
BURST C
B−Y GAIN
CAR ADD
C+BR IN
Y IN
Y(D) IN
HC−LEVEL
AGCDET IN
FY+APO
FY+AP IN
PED
Y+AP IN
B−YBIN
R−YBIN
SCB
SCR
BFP
LAP LEV
LHAP LEV
HAP CONT
CHARA IN
PULSE
C+B OUT
Y OUT
SYNC LEV
SYNC IN
B−YB OUT
B−Y IN
R−Y IN
R−YB OUT
DC CONT
VAP IN
WHTFADE
CF1
LPF
BUFFER
Q36,Q37
BUFFER
Q40,Q41,Q42
IC11
SELECTOR
Q38,Q39
DRIVER
IC12
SELECTOR
Q43,Q44
DRIVER
Q45,Q46,Q47
Q48,Q49
DRIVER
Q50−2/2
AMP
CF3−1/2
LPF
Q50−1/2
BUFFER
Q51−2/2
AMP
CF3−2/2
LPF
Q51−1/2
BUFFER
Q28,Q29,Q30
BUFFER
Q57,Q58
LEVEL SELECTOR
Q31,Q32,Q33
DRIVER
IC3
D/A CONVERTER
DI
CLK
LD
AO 1
AO 2
AO 3
AO 4
AO 5
AO 6
AO 7
AO 8
AO 9
AO 10
AO 11
AO 12
DO
+1.73V
IC13
D/A CONVERTER
IC5,Q35
GAIN CONTROL
CF2
LPF
Q34
BUFFER
Q56
CN1
PROCESS (CN2−8 S DATA 1
CN2−9 S CLK 2
CN2−11 LD 3
CN2−14 STB 4
POWER BOARD CN1 +3R5V 5
SYNC (CN1−10 WHD 6
CN1−11 VD 7
PROCESS CN3−18 B−Y 8
POWER BOARD CN1 GND 9
PROCESS CN3−20 R−Y 10
POWER BOARD CN1 GND 11
PROCESS CN3−23 Y 12
POWER BOARD CN1 GND 13
PROCESS (CN2−22 ZOOM OUT 14
CN2−21 FOCUS OUT 15
SYNC (CN1−10 SC FINE 16
CN1−9 H PHASE 17
CN1−8 PAL−FSC 18
CN1−7 INT−FSC 19
POWER BOARD CN1 GND 20
SYNC CN1−6 SCB 21
POWER BOARD CN1 GND 22
SYNC (CN1−4 SCR 23
CN1−2 BFP 24
CN3
EXTCHA 1 FRONT BOARD CN3−5
GND 2 POWER BOARD CN1
CHASYNC 3 FRONT BOARD CN3−6
CN2
CP2 1 SYNC CN1−1
C BLK 2 SYNC CN2−12
SYNC 3 SYNC CN2−11
+8R6V 4
+5R0V 5
GND 6
GND 7 POWER BOARD CN1
Y OUT 8 REAR BOARD CN1−11
GND 9 POWER BOARD CN1
C OUT 10 REAR BOARD CN1−15
GND 11
VIDEO1 12 REAR BOARD CN1−9
GND 13 POWER BOARD CN1
VIDEO2 14 REAR BOARD CN1−8
GND 15 POWER BOARD CN1
G OUT 16 CN1−7
R OUT 17 CN1−6 REAR BOARD
B OUT 18 CN1−5
GND 19 POWER BOARD CN1
SYNC OUT 20 REAR BOARD CN1−1
GND 21 POWER BOARD CN1
LEN/RLE 22 CN2−23
YLE/BLE 23 CN2−22 FRONT BOARD
FL/FR 24 DRIVE BOARD CN7−22
CN4
−9R5V 1

BLOCK DIAGRAM OF MAIN BOARD (SYNC SECTION)

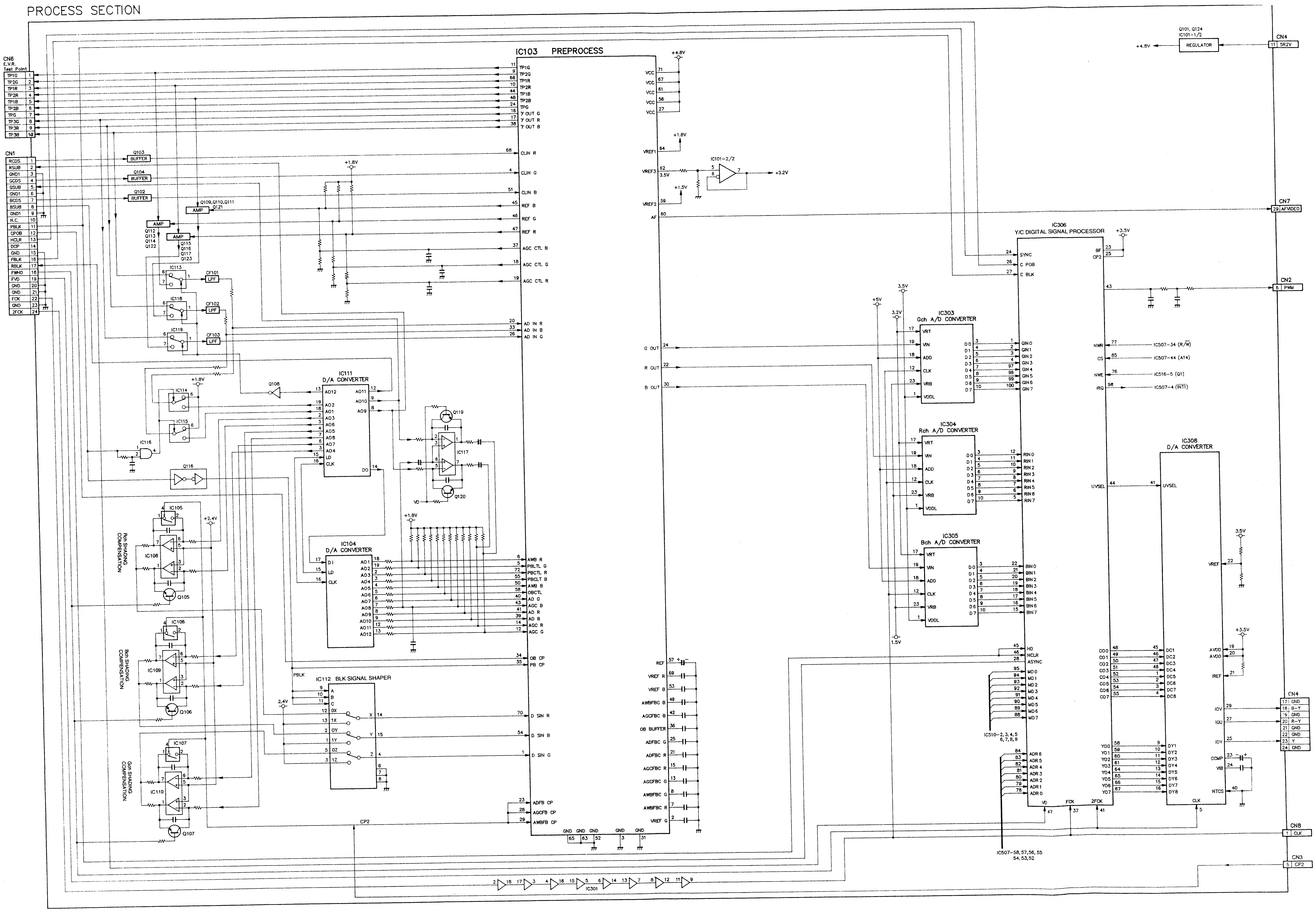

SYNC SECTION
CN2
POWER BOARD CN1 1 GND
REAR BOARD CN1-19 2 G/L IN
POWER BOARD CN1 3 GND
4 GND
5 GND
6 3R5V
7 VD2
POWER BOARD CN1 8 8R6V
REAR BOARD CN1-16 9 G/L VDIN
POWER BOARD CN1 10 5R0V
Q7 BUFFER
IC5 SYNC SEPARATOR
Q16 BUFFER
Q9,Q10,Q11,Q12 Q13,Q14,Q15 BURST SEPARATOR
Q8 BUFFER
+5V
CN1
ENCODER CN1-19 1 INT-SC
CN1-18 2 PAL-SC
CN1-16 3 SC-FINE
PROCESS CN2-18 4 M3
CN2-17 5 M2
CN2-16 6 M1
POWER BOARD CN1 7 GND
PROCESS CN2-13 8 SCP1
CN2-12 9 SCP0
POWER BOARD CN1 10 GND
PROCESS CN1-17 11 RBLK
Q1,Q2,IC2 SC PHASE CONTROL
PAL
NTSC
IC1 SYNC GENERATOR
42 VDFD
66 MS
67 CLR
61 GLSYNC
68 GLBSC
69 BSD
63 VD2
62 GLVD
4 FVR
3 FVRP
80 SRC
79 SCMP
40 M3
39 M2
38 M1
77 SCP1
76 SCP0
51 RBLK
64 NP
41 CW
43 LLDET
SPCO 78
SLPF 2
SCIN 72
A4FSC 1
SCOUT 73
LPF Q3
X1 17.734MHz (NTSC) 14.314MHz (PAL)
CSYNC 55
CBLK 54
CP2 48
BFP 49
SCR 75
SCB 74
CMPP2 14
VD 47
PWHD 52
WHD 53
FVD 44
FWHD 45
FBLK 46
COIN 27
VC1 26
VCO 21
DLPF 17
DPCO 22
VLPF 18
VPCO 23
HLPF 19
HPCO 24
VCXO 20
CXOUT 34
VC2 32
CXIN 33
IC6
L2,D3,D4 VCO
Q4 LPF
Q5 LPF
Q6 LPF
Q6 X2,D5,D6 VCO
14.187MHz
PAL
NTSC
BUFFER
IC3 INVERTER
IC7(a) BUFFER
IC7(d) BUFFER
IC7(c) BUFFER
IC7(f) BUFFER
IC7(e) BUFFER
IC7(b) BUFFER
CN2
1 SYNC ENCODER CN2-3
2 CBLK ENCODER CN2-2
CN1
1 CP2 ENCODER CN2-1
2 BFP ENCODER CN1-24
3 GND POWER BOARD CN1
4 SCR ENCODER CN1-22
5 GND POWER BOARD CN1
6 SCB ENCODER CN1-20
9 HPHASE ENCODER CN1-17
11 VD ENCODER CN1-7
12 WHD ENCODER CN1-6
20 FVD5V PROCESS CN3-5
21 FVD PROCESS CN1-19,DRIVE CN2-19
22 FWHD PROCESS CN1-18,DRIVE CN2-18
24 FBLK PROCESS CN1-16

BLOCK DIAGRAM OF MAIN BOARD (MICROPROCESSOR SECTION)

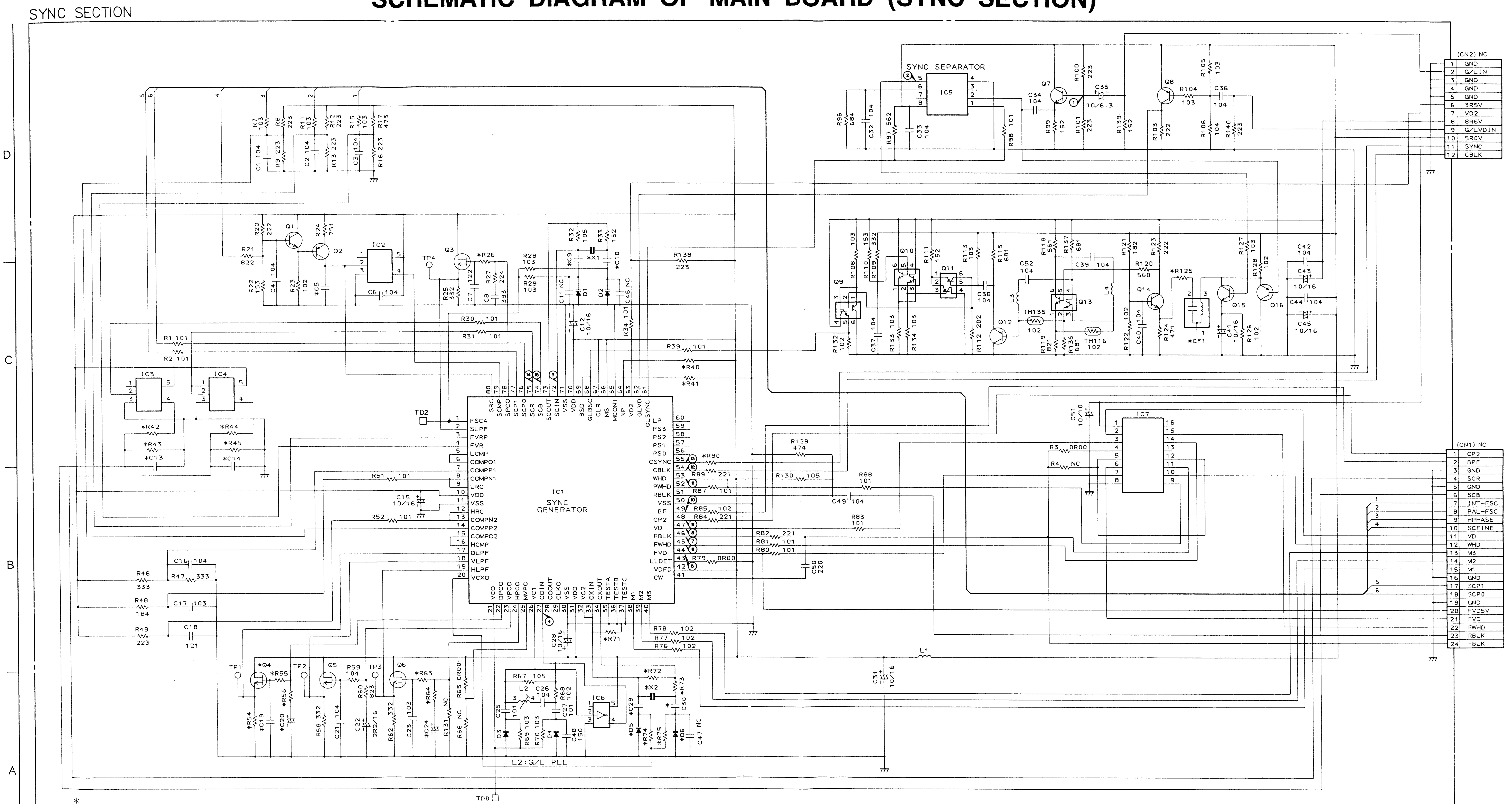
MICROPROCESSOR PART OF PROCESS CIRCUIT SECTION


FRONT BOARD
VR1 R GAIN
VR2 B GAIN
VR2 ELC LEVEL
SW1 SET
AWC SET
HOLD
ABC SET
SW2 W/B
ATW
AWC
MAN
SW3 MAN GAIN
0
+9
+18
SW4 ELC ON/OFF
OFF
ON
SW5 CAM/BAR
BAR
CAM
SW7 MENU
SW8 ITEM
SW9 LEFT
SW10 RIGHT
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
IC1
IC2
+3.5V
3.5V
D1
D2
CN1
+3.5V
LEDOUT
ABCSET
AWCSET
GND
CN2
ADIN 0
ADIN 1
ADIN 5
KEYOUT 0
KEYOUT 1
KEYOUT 2
KEYOUT 3
KEYOUT 4
KEYOUT 5
KEYOUT 6
KEYOUT 7
KEYIN 0
KEYIN 1
KEYIN 2
KEYIN 3
KEYIN 4
KEYIN 5
ADR 9
ADR 10
ADR 11
WEN
YLE/BLE
LEN/RLE
GND
CN3
TXD/RXD
RXD
TXD
GND
CP 2
GND
COMLEV
N.C.
CN5 (EVR)
TEST
VD
GND
SCK
SIO
N.C.
CN7
N.C.
TEST
SIO
SCK
GND
AFVIDEO
IC103-60
CN2
M1
M2
M3
KEYO 0
KEYI 1
KEYI 2
KEYI 3
KEYI 4
IRISRET
RESET
SCP 0
SCP 1
CN1
FWHD
FVD
IC306-45,46
IC306-47
IC501(a)
IC501(b)
IC501(c)
IC501(d)
IC512
+5V
Q503 Q501,Q502 BUFFER
IC105-4
IC106-4
IC107-4
IC103-23, 28,30
IC517
IC503
Q505
Q506
Q507
Q509
Q510
IC510
IC306 -95,94,93,92,91,90,89,88
IC514(a)
IC509(b)
IC515 (b)
IC515 (a)
IC507 MICROPROCESSOR
CLK
RXDI
TXD
AN3
P44
AN0
AN1
AN5
D0
D1
D2
D3
D4
D5
D6
D7
P50
P51
P52
P53
P54
P55
A9
A10
A11
AN4
AN6
AN7
AN2
R/W
E
INT0
XOUT
XIN
VCC
P66
P65
P67
RXDO
TXDO
CLKO
INT1
A0
A1
A2
A3
A4
A5
A6
A14
RDY
HOLD
BYTE
P42
P43
RESET
INT2
IC306-96
IC306-78
IC306-79
IC306-80
IC306-81
IC306-82
IC306-83
IC306-84
IC306-85
3.5V-2
IC502 (a)
IC502 (b)
EEPROM
BUSY
CS
DI
DO
SK
IC508
IC506
CN4
GND 1
GND
FVD5V
TEST
DI
DO
LSCK
LSIO
5R2V
3R5V-2
3R5
5V
B-Y
R-Y
Y
IC308-29
IC308-27
IC308-25

BLOCK DIAGRAM OF MAIN BOARD (PROCESS SECTION)


PROCESS SECTION
CN6
E.V.R.
Test Point
TP1G
TP2G
TP1R
TP2R
TP1B
TP2B
TPG
TP3G
TP3R
TP3B
CN1
RCDS
RSUB
GND1
GCDS
GSUB
GND1
BCDS
BSUB
GND1
N.C.
PBLK
CPOB
HCLR
DCP
GND
FBLK
RBLK
FWHD
FVD
GND
GND
FCK
GND
2FCK
Q103
BUFFER
Q104
BUFFER
Q102
BUFFER
Q109,Q110,Q111
Q121
AMP
AMP
Q112
Q113
Q114
Q122
AMP
Q115
Q116
Q117
Q123
IC113
IC118
IC119
CF101
LPF
CF102
LPF
CF103
LPF
+1.8V
IC114
IC115
IC116
Q116
Q108
IC111
D/A CONVERTER
AO12
AO11
AO10
AO9
AO2
AO1
AO3
AO6
AO5
AO8
AO7
AO4
LD
CLK
DO
Q119
IC117
Q120
VD
+1.8V
IC104
D/A CONVERTER
DI
LD
CLK
AO1
AO2
AO3
AO4
AO5
AO6
AO7
AO8
AO9
AO10
AO11
AO12
IC105
+2.4V
Rch SHADING
COMPENSATION
IC108
Q105
IC106
Bch SHADING
COMPENSATION
IC109
Q106
IC107
Gch SHADING
COMPENSATION
IC110
Q107
PBLK
IC112 BLK SIGNAL SHAPER
2.4V
A
B
C
0X
1X
0Y
1Y
0Z
1Z
X
Y
Z
CP2
IC103 PREPROCESS
TP1G
TP2G
TP1R
TP2R
TP1B
TP2B
TPG
γ OUT G
γ OUT R
γ OUT B
CLIN R
CLIN G
CLIN B
REF B
REF G
REF R
AGC CTL B
AGC CTL G
AGC CTL R
AD IN R
AD IN B
AD IN G
AWB R
PBLTL G
PBCTL R
PBCLT B
AWB B
OBCTL
AD G
AGC B
AD R
AD B
AGC R
AGC G
OB CP
PB CP
D SIN R
D SIN B
D SIN G
ADFB CP
AGCFB CP
AWBFB CP
GND GND GND GND GND
+4.8V
VCC
VCC
VCC
VCC
VCC
+1.8V
VREF1
VREF3
3.5V
+1.5V
VREF2
AF
IC101-2/2
+3.2V
G OUT
R OUT
B OUT
REF
VREF R
VREF B
AWBFBC B
AGCFBC B
OB BUFFER
ADFBC G
ADFBC R
AGCFBC R
AGCFBC G
AWBFBC G
AWBFBC R
VREF G
IC301
Q101, Q124
IC101-1/2
REGULATOR
+4.8V
CN4
5R2V
CN7
AFVIDEO
IC306
Y/C DIGITAL SIGNAL PROCESSOR
+3.5V
SYNC
C POB
C BLK
BF
CP2
CN2
PWM
+5V
3.5V
3.2V
IC303
Gch A/D CONVERTER
VRT
VIN
ADD
CLK
VRB
VDDL
D0 D1 D2 D3 D4 D5 D6 D7
GIN0 GIN1 GIN2 GIN3 GIN4 GIN5 GIN6 GIN7
IC304
Rch A/D CONVERTER
RIN0 RIN1 RIN2 RIN3 RIN4 RIN5 RIN6 RIN7
IC305
Bch A/D CONVERTER
BIN0 BIN1 BIN2 BIN3 BIN4 BIN5 BIN6 BIN7
1.5V
NWR
IC507-34 (R/W̄)
CS
IC507-44 (A14)
NWE
IC516-5 (Q1)
IRQ
IC507-4 (INT̄1̄)
UVSEL
HD
HCLR
ASYNC
MD0 MD1 MD2 MD3 MD4 MD5 MD6 MD7
IC510-2, 3, 4, 5
6, 7, 8, 9
ADR6 ADR5 ADR4 ADR3 ADR2 ADR1 ADR0
IC507-58, 57, 56, 55
54, 53, 52
VD
FCK
2FCK
CO0 CO1 CO2 CO3 CO4 CO5 CO6 CO7
YO0 YO1 YO2 YO3 YO4 YO5 YO6 YO7
IC308
D/A CONVERTER
UVSEL
DC1 DC2 DC3 DC4 DC5 DC6 DC7 DC8
DY1 DY2 DY3 DY4 DY5 DY6 DY7 DY8
CLK
3.5V
VREF
+3.5V
AVDD
AVDD
IREF
IOV
IOU
IOY
CCMP
VIB
NTCS
CN4
17 GND
18 B-Y
19 GND
20 R-Y
21 GND
22 GND
23 Y
24 GND
CN8
1 CLK
CN3
5 CP2

SCHEMATIC DIAGRAM OF MAIN BOARD (SYNC SECTION)


SYNC SECTION
SYNC SEPARATOR
IC5
IC1
SYNC GENERATOR
IC2
IC3
IC4
IC6
IC7
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
Q14
Q15
Q16
TP1
TP2
TP3
TP4
TD2
TD8
L1
L2
L3
L4
TH135
TH116
*X1
*X2
*CF1
L2:G/L PLL
1 FSC4
2 SLPF
3 FVRP
4 FVR
5 LCMP
6 COMPO1
7 COMPP1
8 COMPN1
9 LRC
10 VDD
11 VSS
12 HRC
13 COMPN2
14 COMPP2
15 COMPO2
16 HCMP
17 DLPF
18 VLPF
19 HLPF
20 VCXO
21 VCO
22 DPCO
23 VPCO
24 HPCO
25 MVPC
26 VC1
27 COIN
28 COOUT
29 CLKO
30 VSS
31 VDD
32 VC2
33 CXIN
34 CXOUT
35 TESTA
36 TESTB
37 TESTC
38 M1
39 M2
40 M3
41 CW
42 VDFD
43 LLDET
44 FVD
45 FWHD
46 FBLK
47 VD
48 CP2
49 BF
50 VSS
51 RBLK
52 PWHD
53 WHD
54 CBLK
55 CSYNC
56 PS0
57 PS1
58 PS2
59 PS3
60 LP
61 GLSYNC
62 GLVD
63 VD2
64 NP
65 MCONT
66 MS
67 CLR
68 GLBSC
69 BSO
70 VDD
71 VSS
72 SCIN
73 SCOUT
74 SCB
75 SCR
76 SCP0
77 SCP1
78 VPCO
79 SCMP
80 SRC
(CN2) NC
1 GND
2 G/LIN
3 GND
4 GND
5 GND
6 3R5V
7 VD2
8 8R6V
9 G/LVDIN
10 5R0V
11 SYNC
12 CBLK
(CN1) NC
1 CP2
2 BPF
3 GND
4 SCR
5 GND
6 SCB
7 INT-FSC
8 PAL-FSC
9 HPHASE
10 SCFINE
11 VD
12 WHD
13 M3
14 M2
15 M1
16 GND
17 SCP1
18 SCP0
19 GND
20 FVDSV
21 FVD
22 FWHD
23 PBLK
24 FBLK
R1 101
R2 101
R7 103
R8 223
R9 223
R11 103
R12 223
R13 223
R15 103
R16 223
R17 473
C1 104
C2 104
C3 104
R20 222
R21 822
R22 153
R23 102
R24 751
C4 104
*C5
C6 104
R25 332
*R26
R27 224
C7 122
C8 393
R28 103
R29 103
R30 101
R31 101
R32 105
R33 152
R34 101
*C9
*C10
C11 NC
C12 10/16
D1
D2
C46 NC
R138 223
R39 101
*R40
*R41
*R42
*R43
*R44
*R45
*C13
*C14
R51 101
R52 101
C15 10/16
C16 104
C17 103
C18 121
R46 333
R47 333
R48 184
R49 223
*R54
*R55
*R56
*C19
*C20
R58 332
R59 104
R60 823
C21 104
C22 2R2/16
R62 332
*R63
*R64
R65 0R00
R66 NC
C23 103
*C24
R131 NC
R67 105
C25 101
C26 104
C27 101
C28 10/16
R68 102
R69 103
R70 103
D3
D4
C48 150
*R71
*R72
*R73
*R74
*R75
*C29
C30
*D5
*D6
C47 NC
R76 102
R77 102
R78 102
R79 0R00
R80 101
R81 101
R82 221
R83 101
R84 221
R85 102
R87 101
R88 101
R89 221
*R90
R129 474
R130 105
C49 104
C50 220
C31 10/16
C51 10/10
R3 0R00
R4 NC
R96 684
C32 104
R97 562
C33 104
R98 101
C34 104
R99 152
R100 223
R101 223
C35 10/6.3
R139 152
R103 222
R104 103
R105 103
R106 104
C36 104
R140 223
R108 103
R109 332
R110 153
R111 152
R113 103
R115 681
R112 202
C38 104
C52 104
R118 561
R137 681
C39 104
R119 821
R136 681
R121 182
R123 222
R120 560
*R125
R122 102
C40 104
R124 471
R127 103
R128 102
C41 10/16
R126 102
C42 104
C43 10/16
C44 104
C45 10/16
R132 102
C37 104
R133 103
R134 103
A
B
C
D
1
2
3
4
5
6
7

*

	X1	X2	CF1	Q4	D5	D6	C5	C9	C10	C13	C14	C19	C20	C24	C29	C30
NTSC	DX14R314	NC	S3R6	NC	NC	NC	220	221	221	620	101	NC	NC	2R2/10	NC	NC
PAL	DX17R734	DX14R187	S4R4	2SK662	MA372	MA372	150	331	331	100	150	104	1/16	10/10	331	331

	R26	R40	R41	R42	R43	R44	R45	R54	R55	R56	R63	R64	R71	R72	R73	R74	R75	R90	R125
NTSC	101	NC	101	562	222	562	222	NC	NC	NC	561	123	0R00	NC	NC	NC	NC	431	270
PAL	221	101	NC	822	471	822	471	332	511	334	511	102	NC	105	221	103	103	471	270

Note: The value indicated in schematic diagram should be read as follows:

□ □ □
Multiplier (0 - 5)
2nd. Significant Digit (0 - 9)
1st. Siginificant Digit (1 - 9)

<Example>

For Resistor:

330 → 33×10^0 = 33Ω
561 → 56×10^1 = 560Ω
123 → 12×10^3 = 12kΩ
0R00 = 0 Ω

For Capacitor:

820 → 82×10^0 = 82pF
102 → 10×10^2 = 1000pF = 0.001μF
104 → 10×10^4 = 100000pF = 0.1μF

The suffix attached to capacitance indicates a type of capacitor.

<Index>

SYNC SECTION

IC1	B3
IC2	D2
IC3	C1
IC4	C1
IC5	D5
IC6	A3
IC7	C6
Q1	D2
Q2	D2
Q3	D3
Q5	A2
Q4	A2
Q6	A2
Q7	D6
Q8	D6
Q9	C5
Q10	C5
Q11	C5
Q12	C5
Q13	C6
Q14	C6
Q15	C6
Q16	C7
D1	C3
D2	C3
D3	A3
D4	A4

SYNC BOARD

	IC1
Pin 1	1.6
2	0.6
3	2.3
4	1.6
5	5.0
6	5.0
7	2.5
8	0
9	0
10	5.0
11	0
12	0.2
13	0.2
14	2.2
15	4.9
16	4.9
17	0.4
18	0.5
19	4.9
20	1.2
21	0.7
22	0
23	0
24	5.0
25	5.0
26	0
27	5.0
28	1.2
29	2.3
30	0
31	5.0
32	0
33	0
34	5.0
35	0
36	0
37	0
38	0
39	0
40	0

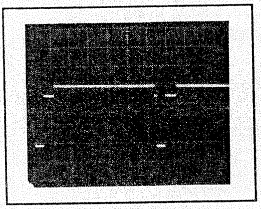
	IC1
Pin 41	0
42	5.0
43	0
44	0.2
45	0.8
46	1.5
47	0.2
48	0.2
49	0.2
50	0
51	1.6
52	0.8
53	0.8
54	1.2
55	4.5
56	4.9
57	4.9
58	4.9
59	4.9
60	0
61	0.2
62	0.3
63	4.9
64	0
65	0
66	5.0
67	5.0
68	0.1
69	0.1
70	5.0
71	0
72	2.5
73	2.6
74	2.4
75	2.4
76	1.2
77	0.9
78	0.9
79	5.0
80	0

	IC2	IC3	IC4	IC5	IC6	IC7
Pin 1	1.1	-	2.4	0.1	1.1	3.6
2	0	2.4	2.4	1.5	0	0.1
3	0	0	0	0	0	0.2
4	5.0	2.4	2.4	0	5.0	0.8
5	5.0	5.0	5.0	3.9	5.0	0.8
6				1.3		0.1
7				5.0		0.2
8				5.0		0
9						1.3
10						0.5
11						1.2
12						0.8
13						0.8
14						0.8
15						0.5
16						1.1

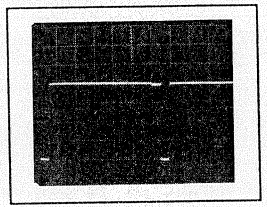
	Q9	Q10	Q11	Q13
Pin 1	0.6	1.2	5.2	3.1
2	0	4.4	5.2	2.3
3	0.6	5.0	4.4	3.1
4	8.6	8.6	0	6.3
5	0.1	5.6	5.0	3.8
6	0	8.6	0	6.5

	B	C	E
Q1	3.8	5.0	3.1
2	3.1	0	3.8
3	(G) 0.1	(D) 5.0	(S) 1.2
4	(G) 0	(D) 5.0	(S) 0.4
5	(G) 0	(D) 5.0	(S) 0.5
6	(G) 5.0	(D) 5.0	(S) 4.8
8	4.5	0.3	5.0
12	2.3	0	1.2
14	1.8	3.7	1.0
15	2.8	2.2	2.1
16	1.5	0	2.2

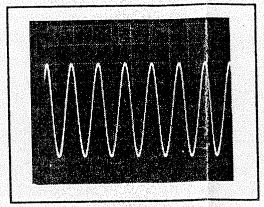
1. 10μsec/DIV 0.2V/DIV



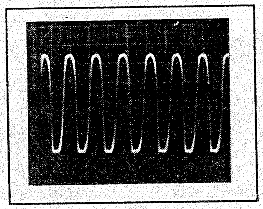
2. 10μsec/DIV 1V/DIV



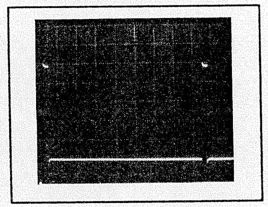
3. 50nsec/DIV 0.5V/DIV



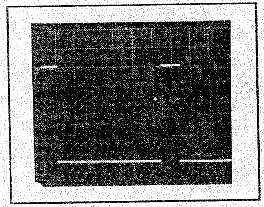
4. 50nsec/DIV 1V/DIV



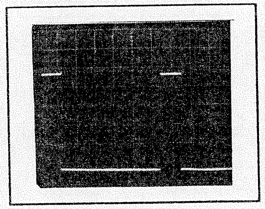
5. 2msec/DIV 1V/DIV



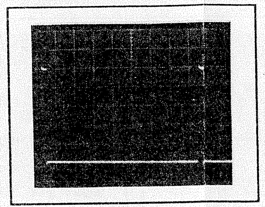
6. 10μsec/DIV 1V/DIV



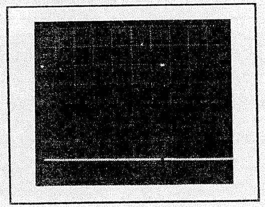
7. 10μsec/DIV 1V/DIV



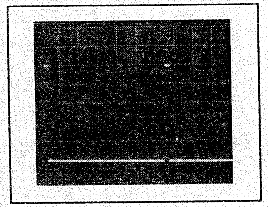
8. 2msec/DIV 1V/DIV



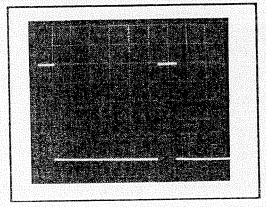
9. 10μsec/DIV 1V/DIV



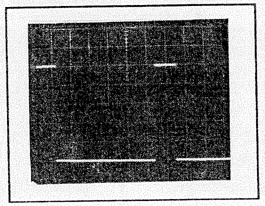
10. 10μsec/DIV 1V/DIV



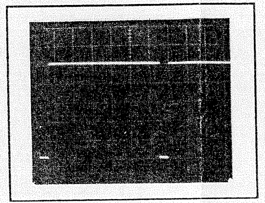
11. 10μsec/DIV 1V/DIV



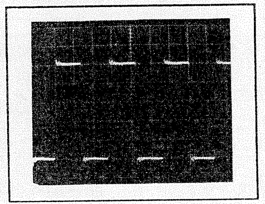
12. 10μsec/DIV 1V/DIV



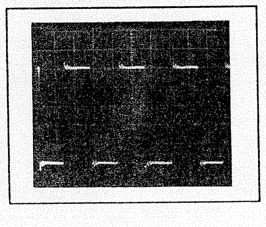
13. 10μsec/DIV 1V/DIV



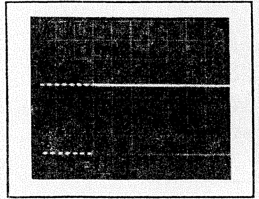
14. 0.1μsec/DIV 1V/DIV



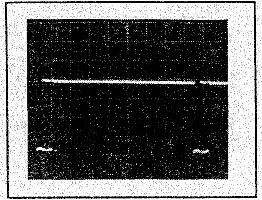
15. 0.1μsec/DIV 1V/DIV



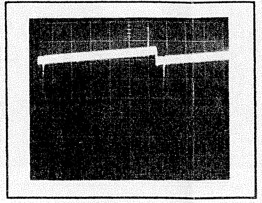
1. 5µsec/DIV 1V/DIV



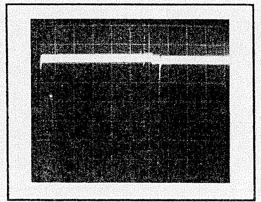
2. 2msec/DIV 1V/DIV



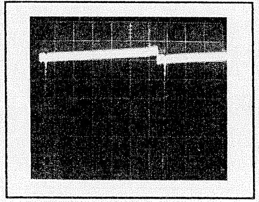
3. 10µsec/DIV 50mV/DIV



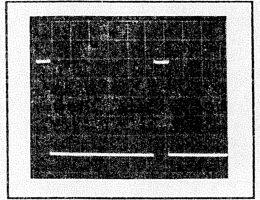
4. 10µsec/DIV 50mV/DIV



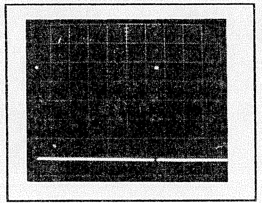
5. 10µsec/DIV 50mV/DIV



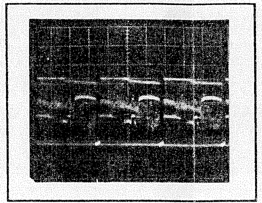
6. 10µsec/DIV 1V/DIV



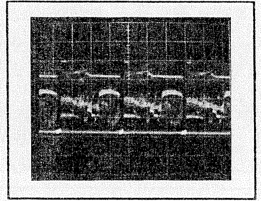
7. 10µsec/DIV 1V/DIV



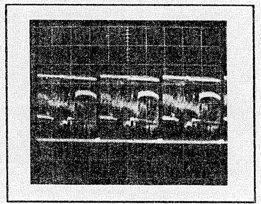
8. 5msec/DIV 0.2V/DIV



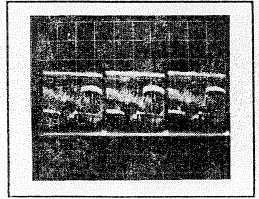
9. 5msec/DIV 0.2V/DIV



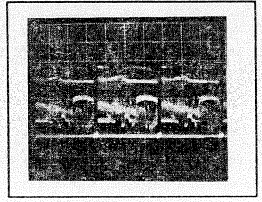
10. 5msec/DIV 0.2V/DIV



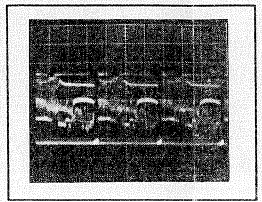
11. 5msec/DIV 0.5V/DIV



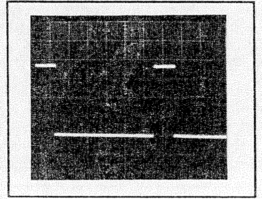
12. 5msec/DIV 0.5V/DIV



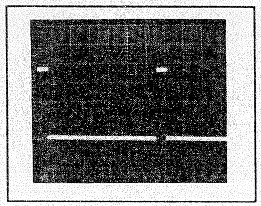
13. 5msec/DIV 0.5V/DIV



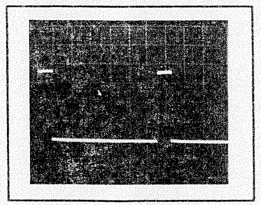
14. 10µsec/DIV 1V/DIV



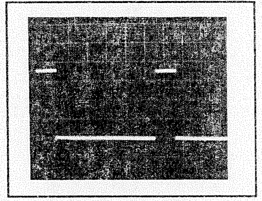
15. 10µsec/DIV 1V/DIV



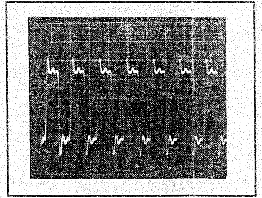
16. 10µsec/DIV 1V/DIV



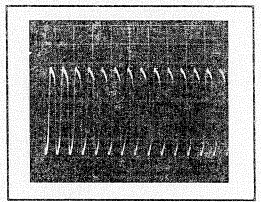
17. 10µsec/DIV 1V/DIV



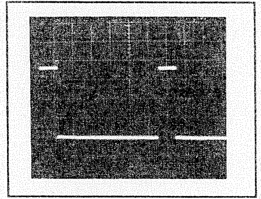
18. 50nsec/DIV 1V/DIV



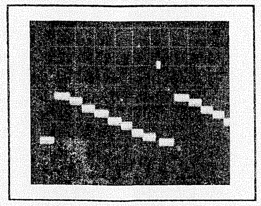
19. 50nsec/DIV 1V/DIV



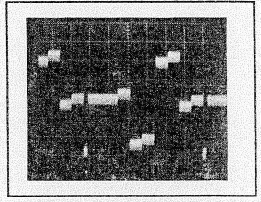
20. 10µsec/DIV 1V/DIV



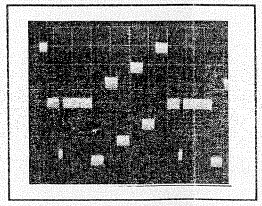
21. 10 µsec/DIV 0.2V/DIV



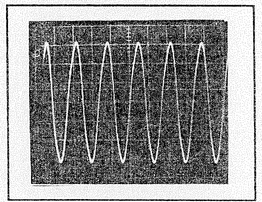
22. 10 µsec/DIV 0.1V/DIV



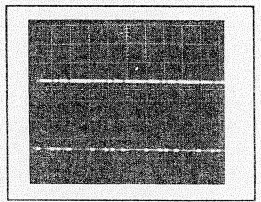
23. 10 µsec/DIV 0.1V/DIV



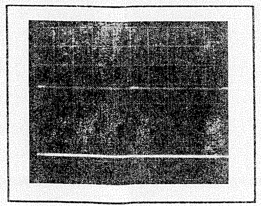
24. 50nsec/DIV 0.5V/DIV



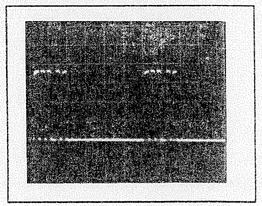
25. 2µsec/DIV 1V/DIV



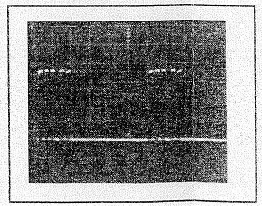
26. 0.1sec/DIV 1V/DIV



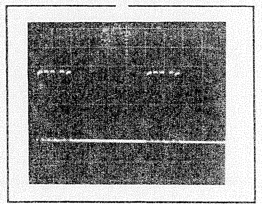
27. 1 µsec/DIV 1V/DIV



28. 1µsec/DIV 1V/DIV



29. 1µsec/DIV 1V/DIV



PROCESS BOARD

	IC101	IC104	IC105	IC106	IC107	IC108	IC109	IC110	IC111	IC112	IC113	IC114	IC115	IC116	IC118	IC119
Pin 1	1.4	0	2.5	2.5	2.5	2.5	2.5	2.5	0	2.5	2.1	1.8	1.8	0.6	2.2	2.2
2	1.8	2.1	2.5	2.5	2.5	2.5	2.5	2.5	2.4	2.5	0	0	0	0.6	0	0
3	1.8	2.1	0	0	0	2.5	2.5	2.5	2.5	2.5	0	0	0	0	0	0
4	0	1.6	4.4	0.2	0.2	0	0	0	2.4	2.5	0	0	0	4.4	0	0
5	3.3	1.3	5.0	5.0	5.0	2.5	2.5	2.5	2.4	2.5	5.0	4.4	4.4	5.0	5.0	5.0
6	3.3	2.2				2.5	2.5	2.5	2.4	0	2.3	1.9	1.9		2.4	2.4
7	3.3	0.6				2.5	2.5	2.5	2.4	0	2.0	1.8	1.8		2.0	2.0
8	5.2	2.4				5.0	5.0	5.0	1.8	0	5.0	5.0	5.0		5.0	5.0
9		2.5							1.8	1.3						
10		3.6							3.6	1.3						
11		3.6							3.6	1.3						
12		0.6							0.8	2.5						
13		0.6							0	2.5						
14		3.3							0.7	2.5						
15		0							0	2.5						
16		3.5							3.5	5.0						
17		0.1							3.3							
18		1.5							1.8							
19		1.9							1.8							
20		0							0							
21																
22																
23																
24																

	IC301	IC303	IC304	IC305	IC501	IC502	IC503	IC505	IC506	IC508	IC509	IC510	IC512	IC514	IC515	IC517
Pin 1	0	1.2	3.6	3.6	4.6	0	4.9	3.5	0	0	2.0	3.1	1.0	2.0	1.1	1.0
2	1.7	0	0	0	0	3.5	4.9	3.5	3.6	3.6	2.0	1.8	4.6	3.1	1.8	0
3	1.7	1.4	1.2	1.4	4.9	3.5	5.0	3.5	3.6	3.6	2.0	2.2	0	1.8	1.8	0
4	1.7	1.3	1.4	1.2	0	0	0	3.5			2.0	2.3	0	0	1.7	5.0
5	1.8	1.8	1.5	1.5	4.9	0.1	4.9	0.1			3.1	2.2	5.0	0	1.2	5.0
6	1.8	1.9	1.6	1.4	5.0	0.1	4.5	0			3.3	1.6		0	3.6	
7	1.8	1.5	1.9	1.0	0	0	5.0	0			0	2.2		0	0	
8	1.8	1.2	2.0	0.8	4.9	0	5.0	0			0	2.2		0	3.6	
9	1.9	1.7	0.7	1.9	5.0	0					0	0.2		0	0	
10	0	0.8	0	0	0	0					0	0		0	3.6	
11	1.9	4.9	4.9	4.9	5.0	0					0	0.2		0	0	
12	1.9	1.9	1.9	0.8	5.0	0					0	0.3		0	3.6	
13	1.8	4.9	4.9	4.9	0	0					0	1.5		0	0	
14	1.8	4.9	4.9	4.9	5.0	3.6					3.6	0.3		3.6	3.6	
15	1.7	4.9	4.9	4.9								0.7				
16	1.7	4.9	4.9	4.9								0.7				
17	1.7	3.3	3.3	3.3								0.6				
18	1.7	4.9	4.9	4.9								1.3				
19	0	2.0	1.9	2.0								1.8				
20	3.5	0	0	0								3.6				
21		0	0	0												
22		0	0	0												
23		1.6	1.6	1.6												
24		0	0	0												

	Q118	Q121	Q122	Q124	Q128
Pin 1	0	1.2	1.3	0.7	1.3
2	0.1	1.8	1.9	0	1.8
3	1.3	0	0	0.7	0
4	5.2	1.8	1.9	0.7	1.9
5	5.2	1.2	1.3	1.4	1.3
6	4.3	5.0	5.0	4.4	5.0

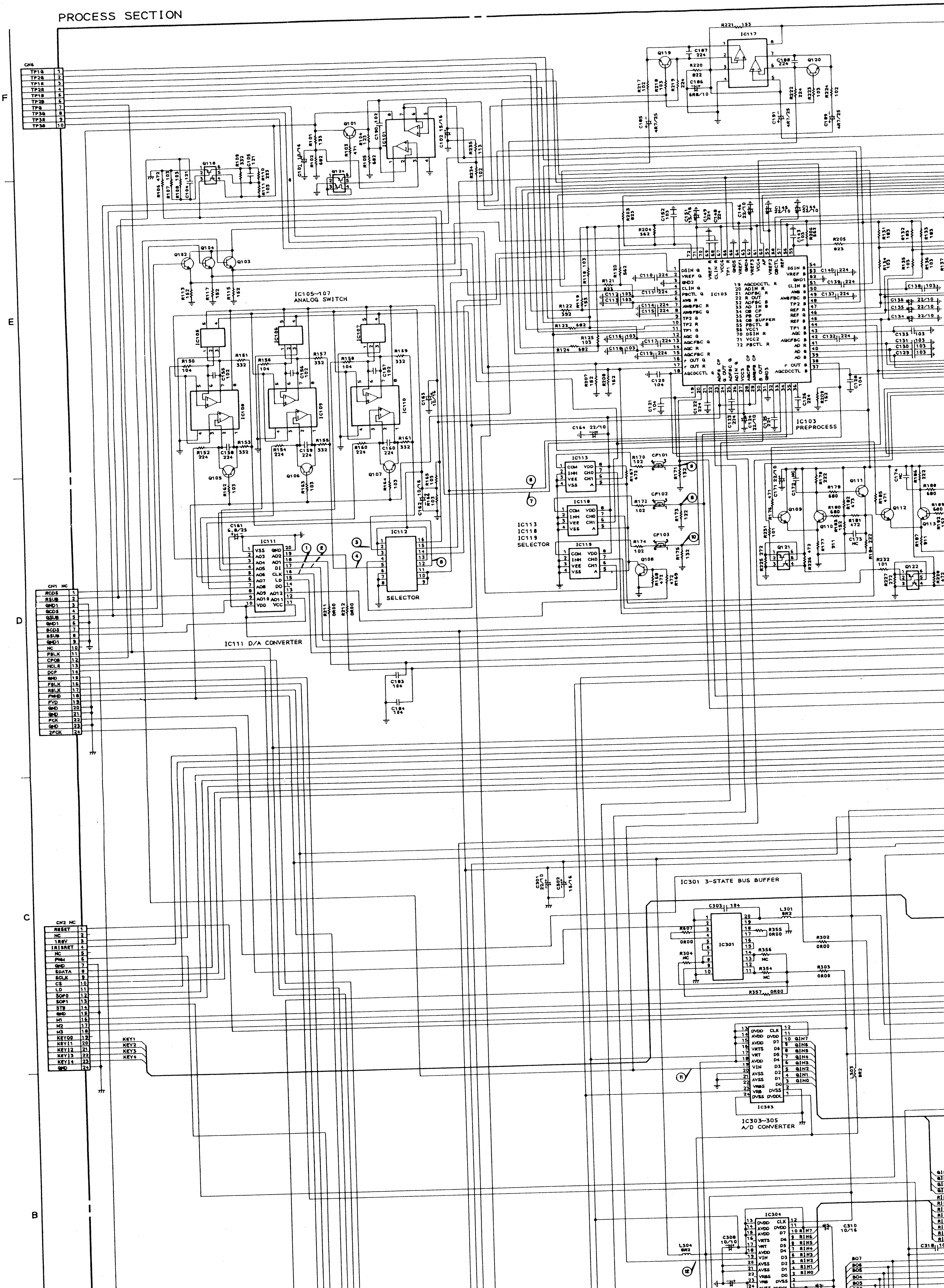
	IC308
Pin 1	2.1
2	1.7
3	1.4
4	2.0
5	2.0
6	0
7	2.0
8	3.5
9	1.4
10	1.4
11	1.4
12	1.5
13	1.2
14	1.9
15	0.6
16	0.1
17	1.3
18	1.3
19	1.3
20	1.6
21	1.6
22	1.6
23	1.5
24	1.5
25	2.7
26	0
27	1.3
28	0
29	3.1
30	0
31	0
32	0
33	0.8
34	0.8
35	1.1
36	1.2
37	1.4
38	1.4
39	1.3
40	3.5
41	1.6
42	0
43	1.3
44	3.5
45	1.9
46	1.9
47	-
48	-

	IC103	IC306	IC507
Pin 1	2.5	2.3	0
2	1.9	2.0	3.5
3	0	1.3	3.6
4	1.9	1.4	0.2
5	1.9	0	0.1
6	1.6	0.8	0
7	3.1	1.7	3.5
8	3.2	1.7	3.5
9	1.9	1.7	3.5
10	1.9	1.5	3.6
11	2.0	1.4	3.6
12	1.1	1.2	0.8
13	3.2	3.4	3.6
14	1.1	0	1.3
15	3.1	2.1	3.6
16	2.4	1.6	0
17	2.3	1.3	0
18	2.8	1.4	3.5
19	2.7	1.5	0
20	1.3	1.5	0
21	3.4	1.3	0
22	1.9	1.4	3.5
23	0.2	0	3.5
24	2.1	0.8	3.5
25	1.6	0	0
26	1.2	0.3	3.5
27	5.0	0.6	1.5
28	0.2	0.8	1.6
29	0.2	0.8	2.0
30	2.0	0.5	0
31	0	0.5	3.5
32	3.4	0.5	0.7
33	1.2	0.5	0.3
34	0.2	0	3.1
35	1.3	0	1.2
36	1.7	0	0.5
37	2.7	1.9	0.5
38	2.4	3.4	0.2
39	2.4	0	0.6
40	1.2	1.2.	0.6
41	2.4	1.2	0.6
42	3.4	1.2	0.3
43	1.1	3.4	2.4
44	1.9	1.6	0.4
45	1.8	0.5	0.6
46	1.9	0.5	0.6
47	1.8	0.1	1.6
48	1.8	1.9	0.6
49	3.4	2.1	0.3
50	1.8	2.5	0.9

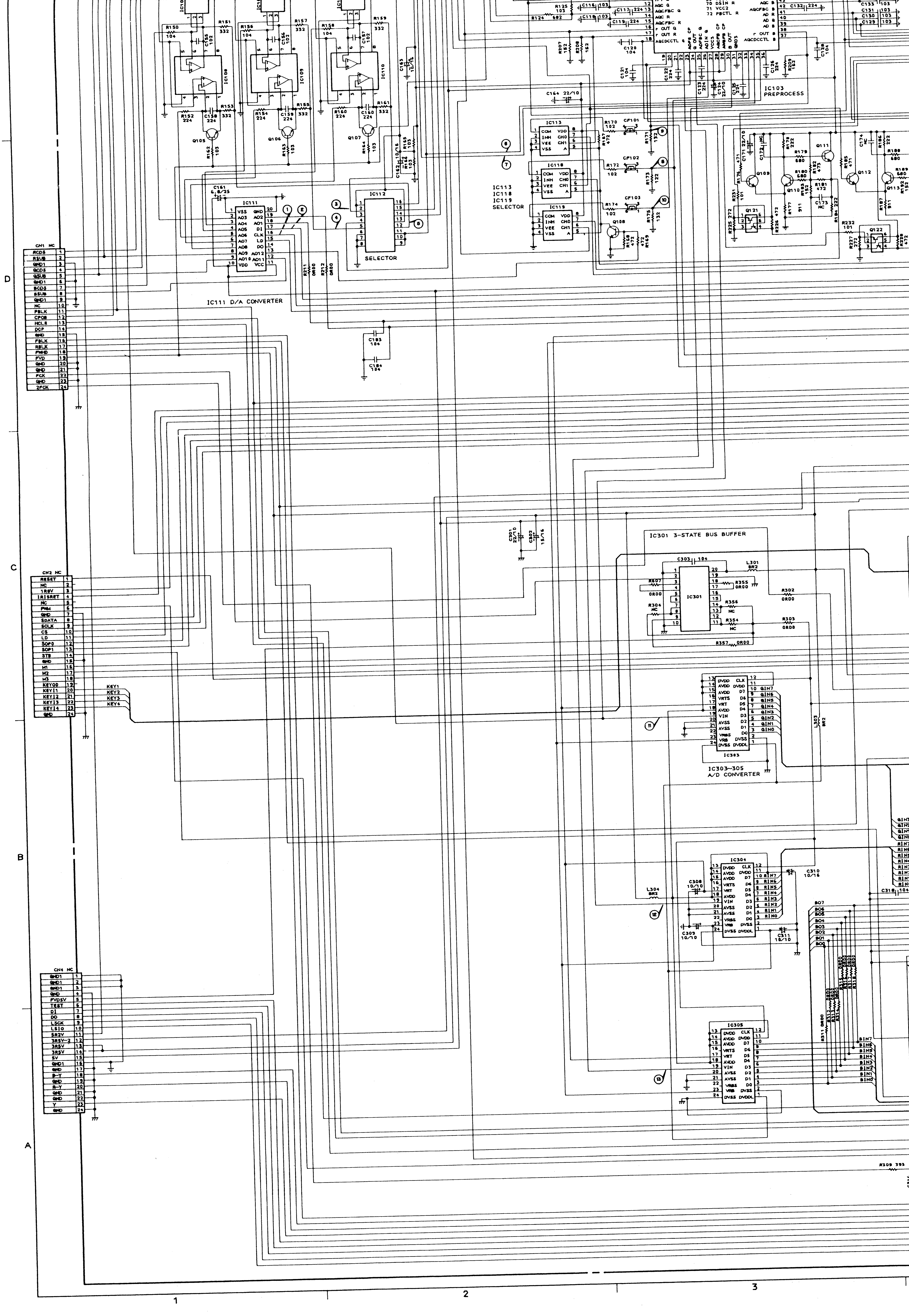
	IC103	IC306	IC507
Pin 51	1.9	1.6	1.1
52	0	1.2	2.8
53	1.9	2.0	2.2
54	2.5	1.9	2.1
55	1.9	1.5	1.5
56	5.0	1.3	1.8
57	1.2	1.3	1.8
58	1.7	1.3	0.4
59	1.6	1.4	3.5
60	1.3	1.3	4.2
61	1.2	1.6	0
62	3.6	0	0
63	0	3.4	0.1
64	1.9	0.9	0
65	0	1.0	3.5
66	1.9	0.6	3.5
67	5.0	1.4	3.5
68	1.9	1.6	3.5
69	1.3	1.6	3.5
70	2.5	1.7	0
71	5.0	1.6	0
72	1.9	1.2	0
73		0.7	0
74		0.7	1.8
75		1.7	0
76		3.3	0
77		3.1	0
78		0.4	1.7
79		1.8	1.8
80		1.1	3.5
81		1.8	
82		2.0	
83		2.2	
84		2.2	
85		0.9	
86		0	
87		3.4	
88		1.2	
89		2.1	
90		2.1	
91		1.2	
92		2.3	
93		1.0	
94		2.2	
95		1.2	
96		0.2	
97		0.2	
98		1.2	
99		1.9	
100		1.2	

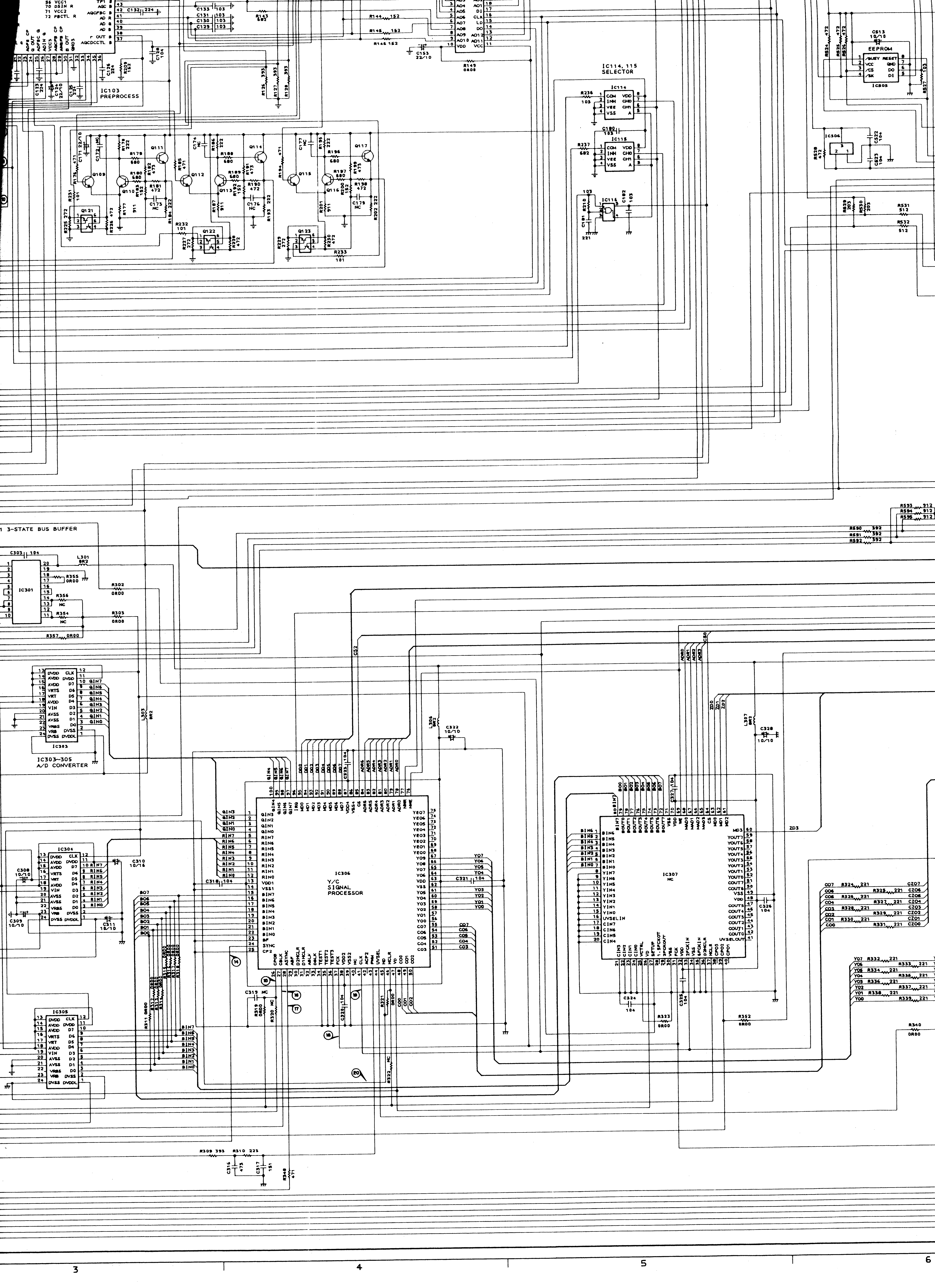
	B	C	E
Q101	4.6	5.0	5.2
102	2.1	5.0	1.4
103	2.1	5.0	1.4
104	2.3	5.0	1.5
105	0.1	2.5	2.5
106	0.1	2.5	2.5
107	0.1	2.5	2.5
108	0	5.0	0
109	1.9	5.0	1.2
110	1.9	2.9	1.2
111	2.8	5.0	2.1
112	2.0	5.0	1.3
113	2.0	2.9	1.3
114	3.0	5.0	2.2
115	1.9	5.0	1.2
116	1.9	2.7	1.2
117	2.8	5.0	2.0
119	0.1	1.7	1.7
120	0.1	1.7	1.7
501	0	4.6	5.0
502	0	5.0	0
503	0	5.0	0
505	0.1	0.1	0
506	4.2	4.9	5.0
507	4.6	0.8	0.3
508	0.8	3.5	0.3
509	0	3.6	0.3
510	0	3.6	0.3
511	0	3.6	0.3

SC

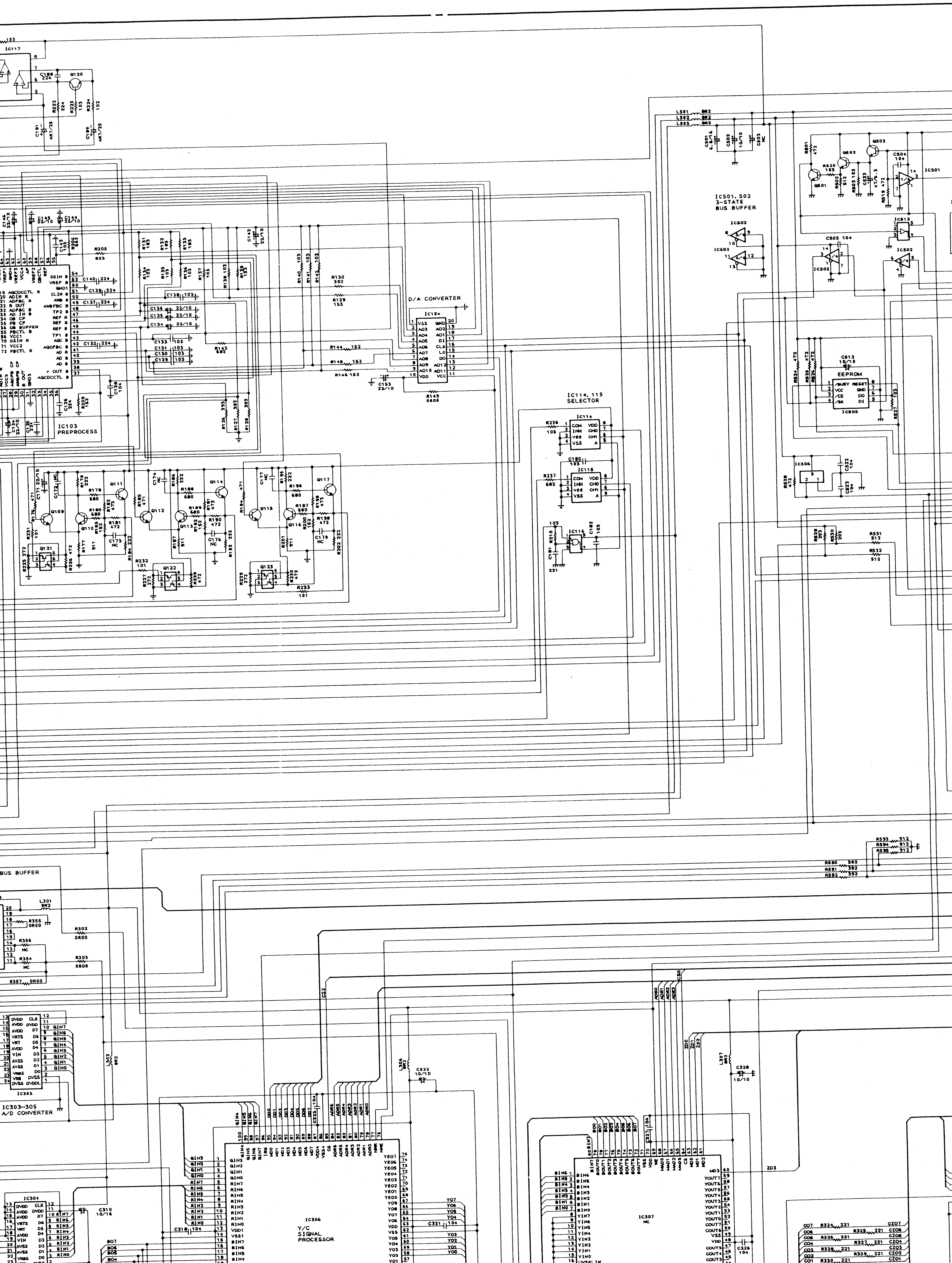


PROCESS SECTION
F
E
D
C
B
CN6
TP1G
TP2G
TP1R
TP2R
TP1B
TP2B
TPG
TP3G
TP3R
TP3B
CN1 NC
RCDS
RSUB
GND1
GCDS
GSUB
GND1
BCDS
BSUB
GND1
NC
PBLK
CPOB
HCLR
DCP
GND
FBLK
RBLK
FWHD
FVD
GND
GND
FCK
GND
2FCK
CN2 NC
RESET
NC
18SV
IRISRET
NC
PWM
GND
SDATA
SCLK
CS
LD
SOP0
SOP1
STB
GND
M1
M2
M3
KEY00
KEY11
KEY12
KEY13
KEY14
GND
KEY1
KEY2
KEY3
KEY4
IC117
IC105~107
ANALOG SWITCH
IC108
IC109
IC110
IC111
IC111 D/A CONVERTER
IC112
SELECTOR
IC103
IC103
PREPROCESS
IC113
IC118
IC119
IC113
IC118
IC119
SELECTOR
IC301 3-STATE BUS BUFFER
IC301
IC303
IC303~305
A/D CONVERTER
IC304


CN1 NC
RCDS 1
RSUB 2
GND1 3
GCDS 4
GSUB 5
GND1 6
BCDS 7
BSUB 8
GND1 9
NC 10
PBLK 11
CPOB 12
HCLR 13
DCP 14
GND 15
FBLK 16
RBLK 17
FWHD 18
FVD 19
GND 20
GND 21
FCK 22
GND 23
2FCK 24
CN2 NC
RESET 1
NC 2
1R8V 3
IRISRET 4
NC 5
PWM 6
GND 7
SDATA 8
SCLK 9
CS 10
LD 11
SOP0 12
SOP1 13
STB 14
GND 15
M1 16
M2 17
M3 18
KEY00 19
KEY11 20
KEY12 21
KEY13 22
KEY14 23
GND 24
KEY1
KEY2
KEY3
KEY4
CN4 NC
GND1 1
GND1 2
GND1 3
GND 4
FVD5V 5
TEST 6
DI 7
DO 8
LSCK 9
LSIO 10
5R2V 11
3R5V-2 12
3R5V 13
3R5V 14
5V 15
GND1 16
GND 17
B-Y 18
GND 19
R-Y 20
GND 21
GND 22
Y 23
GND 24
IC108
IC109
IC110
R150 104
R151 332
C155 102
R156 104
R157 332
C156 102
R158 104
R159 332
C157 102
R152 224
C158 224
R153 332
R154 224
C159 224
R155 332
R160 224
C160 224
R161 332
Q105
Q106
Q107
R162 103
R163 103
R164 103
C153 10/16
C162 10/16
R165 103
R166 103
C161 6.8/25
IC111
VSS GND
AO3 AO2
AO4 AO1
AO5 DI
AO6 CLK
AO7 LD
AO8 DO
AO9 AO12
AO10 AO11
VDD VCC
IC111 D/A CONVERTER
IC112
SELECTOR
R211 0R00
R212 0R00
C183 104
C184 104
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫
⑬
R125 103
R124 682
C116 103
C117 224
C118 103
C119 224
C120 104
C121 104
C122 224
C123 224
C124 22/10
C125 224
C126 224
C128 104
C132 224
C133 103
C131 103
C130 103
C129 103
R207 152
R208 152
R209 152
70 DSIN R
71 VCC2
72 PBCTL R
AGC Q
AGCFBC Q
AGC R
AGCFBC R
OUT Q
OUT R
AGCDCCTL
AGC B
AGCFBC B
AD R
AD B
OUT B
AGCDCCTL B
IC103
PREPROCESS
C164 22/10
IC113
COM VDD
INH CH0
VEE CH1
VSS A
IC118
IC119
IC113
IC118
IC119
SELECTOR
R170 102
R167 472
CF101
R171 132
R172 102
CF102
R173 122
R174 102
CF103
R175 132
Q108
R168 472
R169 472
C171 22/10
C172 NC
R178 222
R179 680
R176 471
Q109
R180 680
Q110
R182 473
R183 152
R181 472
Q111
C173 NC
R184 222
R185 471
C174 NC
R186 222
R188
R189 680
Q112
Q113
R231 101
R177 911
R187 911
Q121
R225 472
R226 272
R232 101
Q122
R227
IC301 3-STATE BUS BUFFER
C303 104
IC301
L301 BR2
R607
0R00
R355 0R00
R356 NC
R354 NC
R304 NC
R302 0R00
R305 0R08
R357 0R00
C301 22/10
C302 15/16
IC303
DVDD CLK
AVDD DVDD
AVDD D7
VRTS D6
VRT D5
AVDD D4
VIN D3
AVSS D2
AVSS D1
VRBS D0
VRB DVSS
DVSS DVDDL
GIN7
GIN6
GIN5
GIN4
GIN3
GIN2
GIN1
GIN0
L303 BR2
IC303~305
A/D CONVERTER
IC304
C308 10/10
L304 BR2
C309 10/10
C310 10/16
C311 10/10
RIN7
RIN6
RIN5
RIN4
RIN3
RIN2
RIN1
RIN0
C318 104
BO7
BO6
BO5
BO4
BO3
BO2
BO1
BO0
R311 0R00
IC305
BIN7
BIN6
BIN5
BIN4
BIN3
BIN2
BIN1
BIN0
R309 395
D
C
B
A
1
2
3

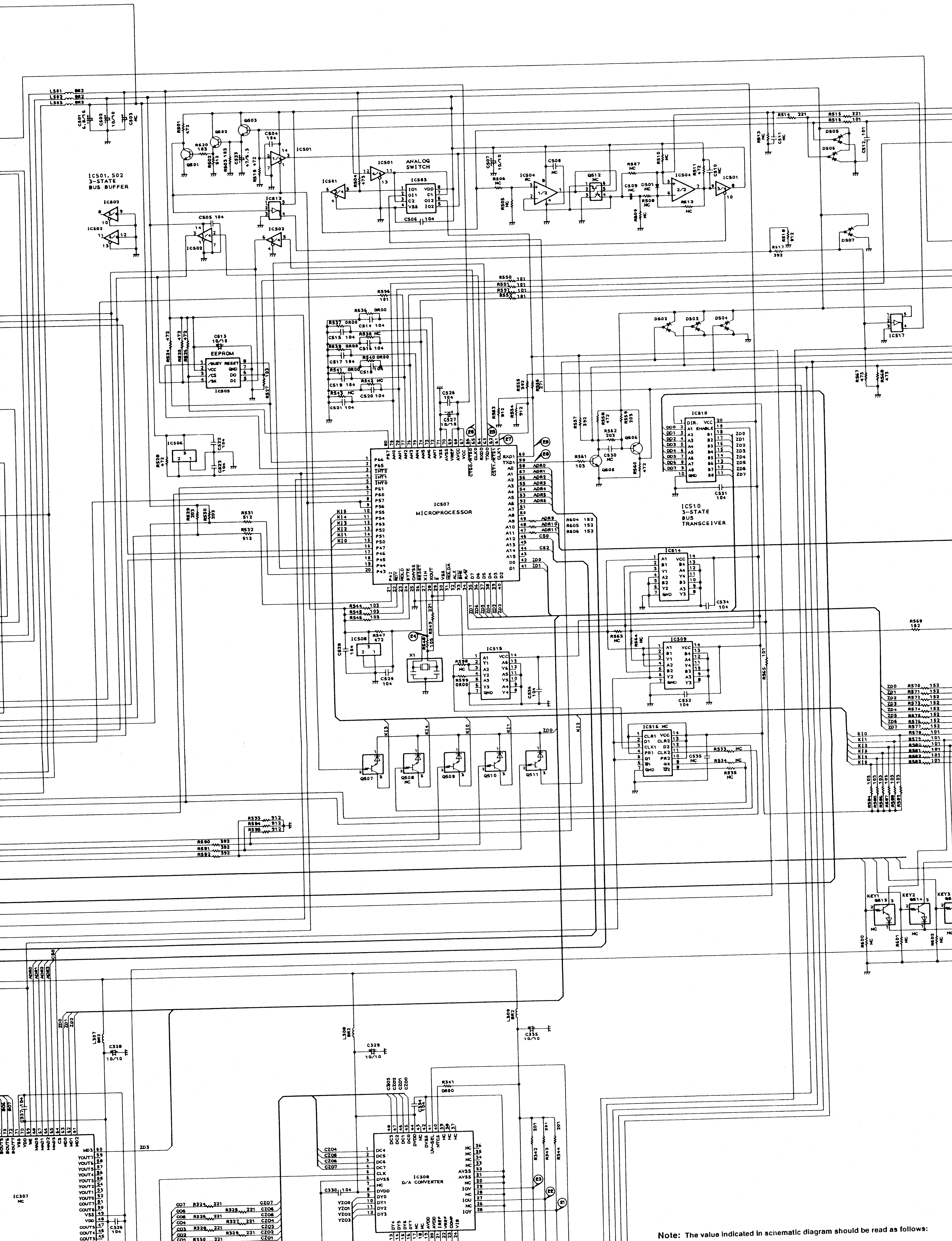

IC103
PREPROCESS
IC114, 115
SELECTOR
IC114
IC115
IC116
EEPROM
IC505
IC506
3-STATE BUS BUFFER
IC301
IC303
IC303~305
A/D CONVERTER
IC304
IC305
IC306
Y/C
SIGNAL
PROCESSOR
IC307
NC
Q109
Q110
Q111
Q112
Q113
Q114
Q115
Q116
Q117
Q121
Q122
Q123
3
4
5
6

SCHEMATIC DIAGRAM OF MAIN BOARD (PROCESS SECTION)

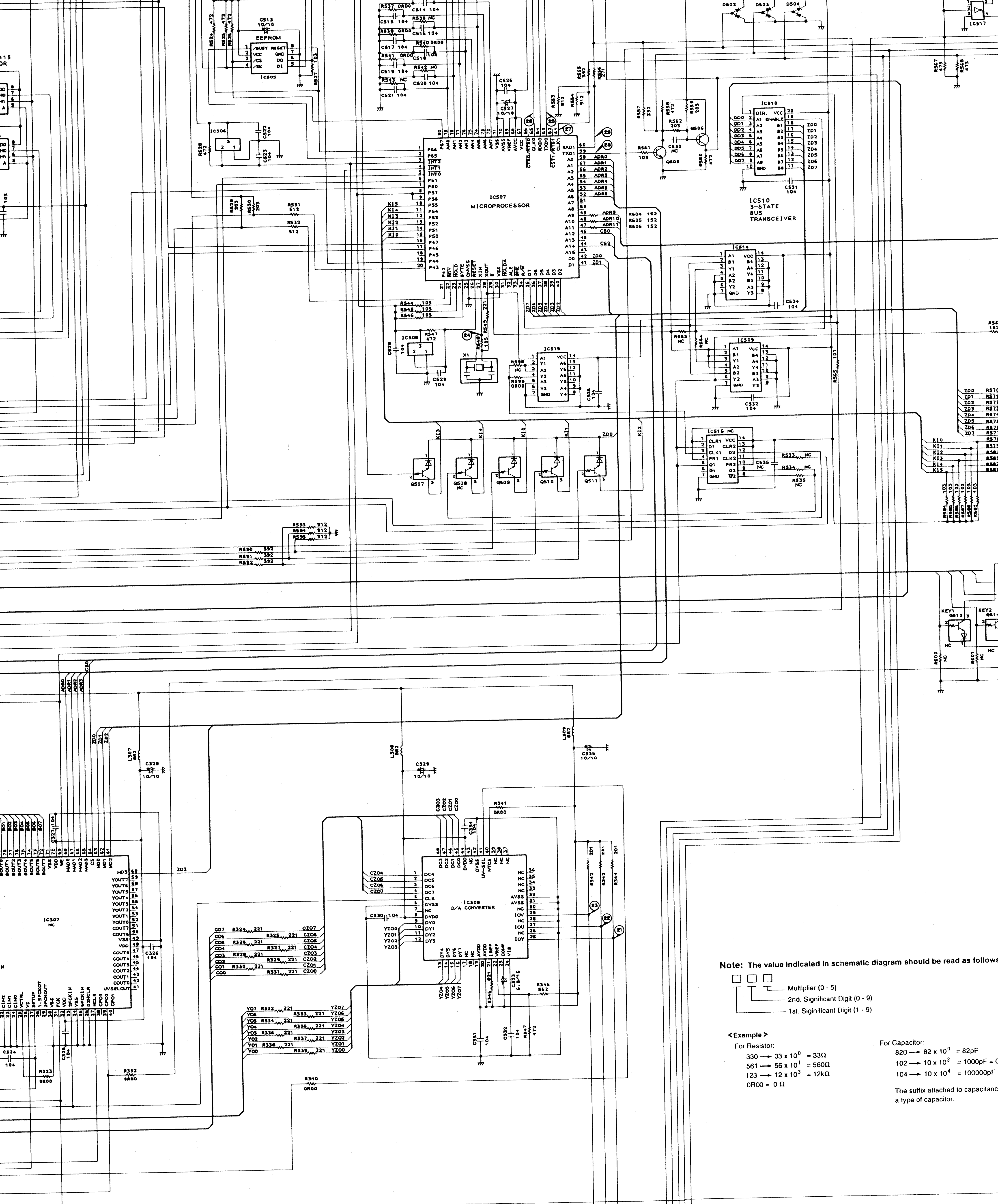


IC117
Q120
IC103
PREPROCESS
D/A CONVERTER
IC104
IC114, 115
SELECTOR
IC114
IC115
IC116
IC501, 502
3-STATE
BUS BUFFER
IC502
IC512
IC501
EEPROM
IC505
IC506
IC513
Q501
Q502
Q503
Q109
Q110
Q111
Q112
Q113
Q114
Q115
Q116
Q117
Q121
Q122
Q123
BUS BUFFER
L301
IC303
IC303~305
A/D CONVERTER
IC304
IC306
Y/C
SIGNAL
PROCESSOR
IC307
NC
L303
L306
L307
C322
10/10
C328
10/10

PROCESS SECTION)


IC501, 502
3-STATE
BUS BUFFER
IC501
IC502
IC512
ANALOG SWITCH
IC503
IC504
Q501
Q502
Q503
Q512
D501
D505
D506
D507
EEPROM
IC505
IC506
IC507
MICROPROCESSOR
IC508
X1
IC515
IC514
IC509
IC510
3-STATE
BUS
TRANSCEIVER
IC516 NC
IC517
D502
D503
D504
Q505
Q506
Q507
Q508
Q509
Q510
Q511
KEY1
KEY2
KEY3
Q513
Q514
IC307
NC
IC308
D/A CONVERTER
L501 BR2
L502 BR2
L503 BR2
L307 BR2
L308 BR2
L309 BR2
C328 10/10
C329 10/10
C335 10/10

Note: The value indicated in schematic diagram should be read as follows:


EEPROM
IC505
IC506
IC507
MICROPROCESSOR
IC508
IC509
IC510
IC510 3-STATE BUS TRANSCEIVER
IC514
IC515
IC516 NC
IC517
IC307 NC
IC308 D/A CONVERTER
X1
Q505
Q506
Q507
Q508 NC
Q509
Q510
Q511
Q513
D502
D503
D504
KEY1
KEY2
ADR0
ADR1
ADR2
ADR3
ADR4
ADR5
ADR6
ADR9
ADR10
ADR11
ZD0
ZD1
ZD2
ZD3
ZD4
ZD5
ZD6
ZD7
KI0
KI1
KI2
KI3
KI4
KI5
CS0
CS2
CZ00
CZ01
CZ02
CZ03
CZ04
CZ05
CZ06
CZ07
YZ00
YZ01
YZ02
YZ03
YZ04
YZ05
YZ06
YZ07
5
6
7
8

Note: The value indicated in schematic diagram should be read as follows

□ □ □
- Multiplier (0 - 5)
- 2nd. Significant Digit (0 - 9)
- 1st. Siginificant Digit (1 - 9)

<Example>

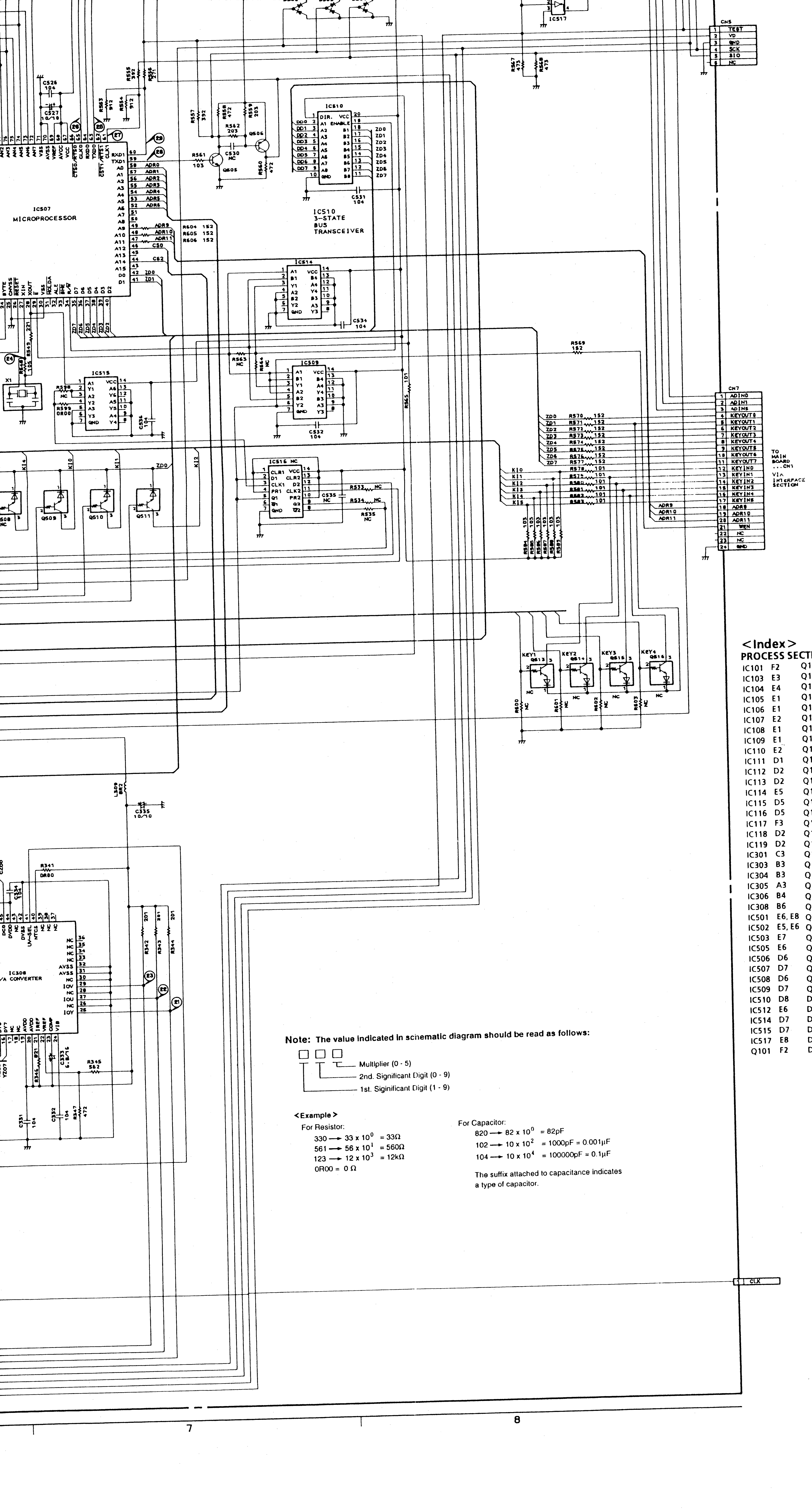
For Resistor:

330 → 33×10^0 = 33Ω
561 → 56×10^1 = 560Ω
123 → 12×10^3 = 12kΩ
0R00 = 0 Ω

For Capacitor:

820 → 82×10^0 = 82pF
102 → 10×10^2 = 1000pF =
104 → 10×10^4 = 100000pF =

The suffix attached to capacitanc
a type of capacitor.


IC507
MICROPROCESSOR
IC510
3-STATE
BUS
TRANSCEIVER
IC514
IC515
IC509
IC516 NC
IC517
IC308
D/A CONVERTER
CN5
1 TEST
2 VD
3 GND
4 SCK
5 SIO
6 NC
CN7
1 ADIN0
2 ADIN1
3 ADIN5
4 KEYOUT0
5 KEYOUT1
6 KEYOUT2
7 KEYOUT3
8 KEYOUT4
9 KEYOUT5
10 KEYOUT6
11 KEYOUT7
12 KEYIN0
13 KEYIN1
14 KEYIN2
15 KEYIN3
16 KEYIN4
17 KEYIN5
18 ADR9
19 ADR10
20 ADR11
21 WEN
22 NC
23 NC
24 GND
TO
MAIN
BOARD
...CN1
VIA
INTERFACE
SECTION
KEY1
KEY2
KEY3
KEY4
Q513
Q514
Q515
Q516
Q505
Q506
Q508
Q509
Q510
Q511
X1
CLK
7
8

Note: The value indicated in schematic diagram should be read as follows:

□ □ □

Multiplier (0 - 5)

2nd. Significant Digit (0 - 9)

1st. Siginificant Digit (1 - 9)

<Example>

For Resistor:

330 ⟶ 33×10^0 = 33Ω
561 ⟶ 56×10^1 = 560Ω
123 ⟶ 12×10^3 = 12kΩ
0R00 = 0 Ω

For Capacitor:

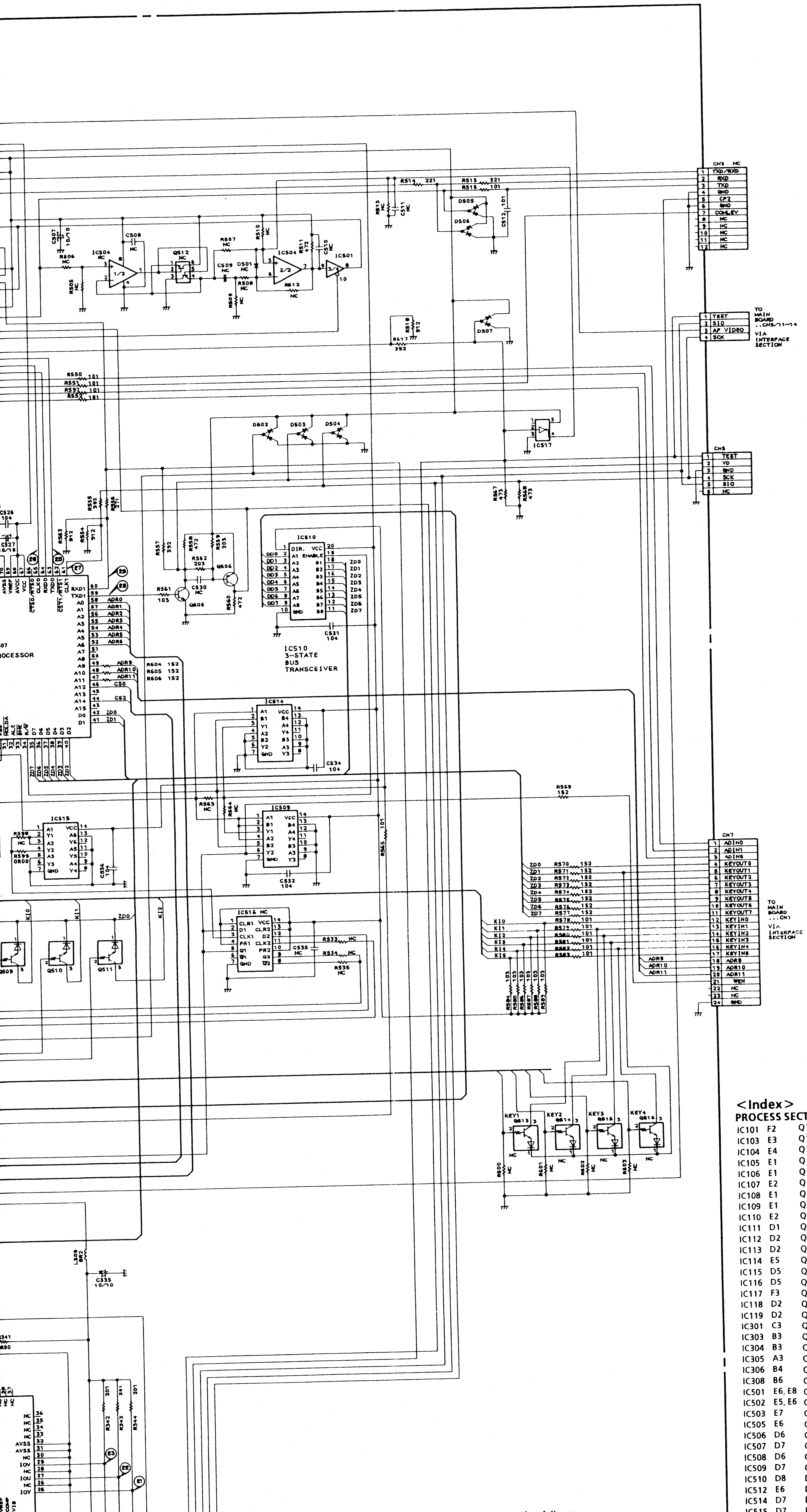
820 ⟶ 82×10^0 = 82pF
102 ⟶ 10×10^2 = 1000pF = 0.001μF
104 ⟶ 10×10^4 = 100000pF = 0.1μF

The suffix attached to capacitance indicates a type of capacitor.

<Index>

PROCESS SECTION

IC101	F2	Q102	E1
IC103	E3	Q103	E1
IC104	E4	Q104	E1
IC105	E1	Q105	E1
IC106	E1	Q106	E1
IC107	E2	Q107	E2
IC108	E1	Q108	D3
IC109	E1	Q109	D3
IC110	E2	Q110	D3
IC111	D1	Q111	D3
IC112	D2	Q112	D3
IC113	D2	Q113	D4
IC114	E5	Q114	D4
IC115	D5	Q115	D4
IC116	D5	Q116	D4
IC117	F3	Q117	D4
IC118	D2	Q118	F1
IC119	D2	Q119	F3
IC301	C3	Q120	F3
IC303	B3	Q121	D3
IC304	B3	Q122	D3
IC305	A3	Q123	D4
IC306	B4	Q124	E2
IC308	B6	Q501	E6
IC501	E6, E8	Q502	E6
IC502	E5, E6	Q503	E6
IC503	E7	Q505	D7
IC505	E6	Q506	D7
IC506	D6	Q507	C6
IC507	D7	Q509	C7
IC508	D6	Q510	C7
IC509	D7	Q511	C7
IC510	D8	D502	E7
IC512	E6	D503	E7
IC514	D7	D504	E8
IC515	D7	D505	E8
IC517	E8	D506	E8
Q101	F2	D507	E8


CN3 NC
1 TXD/RXD
2 RXD
3 TXD
4 GND
5 CP2
6 GND
7 COMLEV
8 NC
9 NC
10 NC
11 NC
12 NC
1 TEST
2 SIO
3 AF VIDEO
4 SCK
TO MAIN BOARD ..CN5/11~14 VIA INTERFACE SECTION
CN5
1 TEST
2 VD
3 GND
4 SCK
5 SIO
6 NC
CN7
1 ADIN0
2 ADIN1
3 ADIN5
4 KEYOUT0
5 KEYOUT1
6 KEYOUT2
7 KEYOUT3
8 KEYOUT4
9 KEYOUT5
10 KEYOUT6
11 KEYOUT7
12 KEYIN0
13 KEYIN1
14 KEYIN2
15 KEYIN3
16 KEYIN4
17 KEYIN5
18 ADR9
19 ADR10
20 ADR11
21 WEN
22 NC
23 NC
24 GND
TO MAIN BOARD ...CN1 VIA INTERFACE SECTION
IC504 NC
IC501
IC510 3-STATE BUS TRANSCEIVER
IC514
IC515
IC509
IC516 NC
IC517
D502
D503
D504
D505
D506
D507
Q505
Q506
Q509
Q510
Q511
Q512 NC
KEY1 Q513
KEY2 Q514
KEY3 Q515
KEY4 Q516
PROCESSOR

<Index>

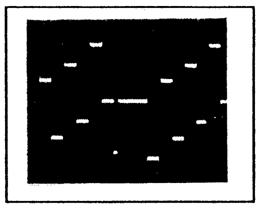
PROCESS SECTION

IC101	F2	Q102	E1
IC103	E3	Q103	E1
IC104	E4	Q104	E1
IC105	E1	Q105	E1
IC106	E1	Q106	E1
IC107	E2	Q107	E2
IC108	E1	Q108	D3
IC109	E1	Q109	D3
IC110	E2	Q110	D3
IC111	D1	Q111	D3
IC112	D2	Q112	D3
IC113	D2	Q113	D4
IC114	E5	Q114	D4
IC115	D5	Q115	D4
IC116	D5	Q116	D4
IC117	F3	Q117	D4
IC118	D2	Q118	F1
IC119	D2	Q119	F3
IC301	C3	Q120	F3
IC303	B3	Q121	D3
IC304	B3	Q122	D3
IC305	A3	Q123	D4
IC306	B4	Q124	E2
IC308	B6	Q501	E6
IC501	E6, E8	Q502	E6
IC502	E5, E6	Q503	E6
IC503	E7	Q505	D7
IC505	E6	Q506	D7
IC506	D6	Q507	C6
IC507	D7	Q509	C7
IC508	D6	Q510	C7
IC509	D7	Q511	C7
IC510	D8	D502	E7
IC512	E6	D503	E7
IC514	D7	D504	E8
IC515	D7	D505	E8
IC517	E8	D506	E8

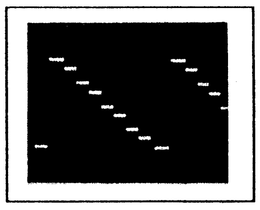
Note: The value indicated in schematic diagram should be read as follows:

INTERFACE SECTION

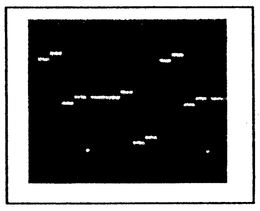
1. 10µsec/DIV 0.1V/DIV



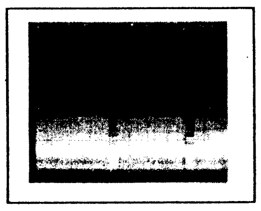
2. 10µsec/DIV 0.1V/DIV



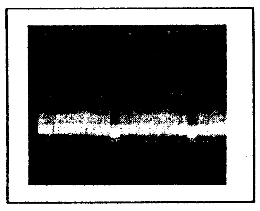
3. 10µsec/DIV 0.1V/DIV



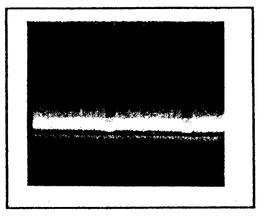
4. 2msec/DIV 0.2V/DIV

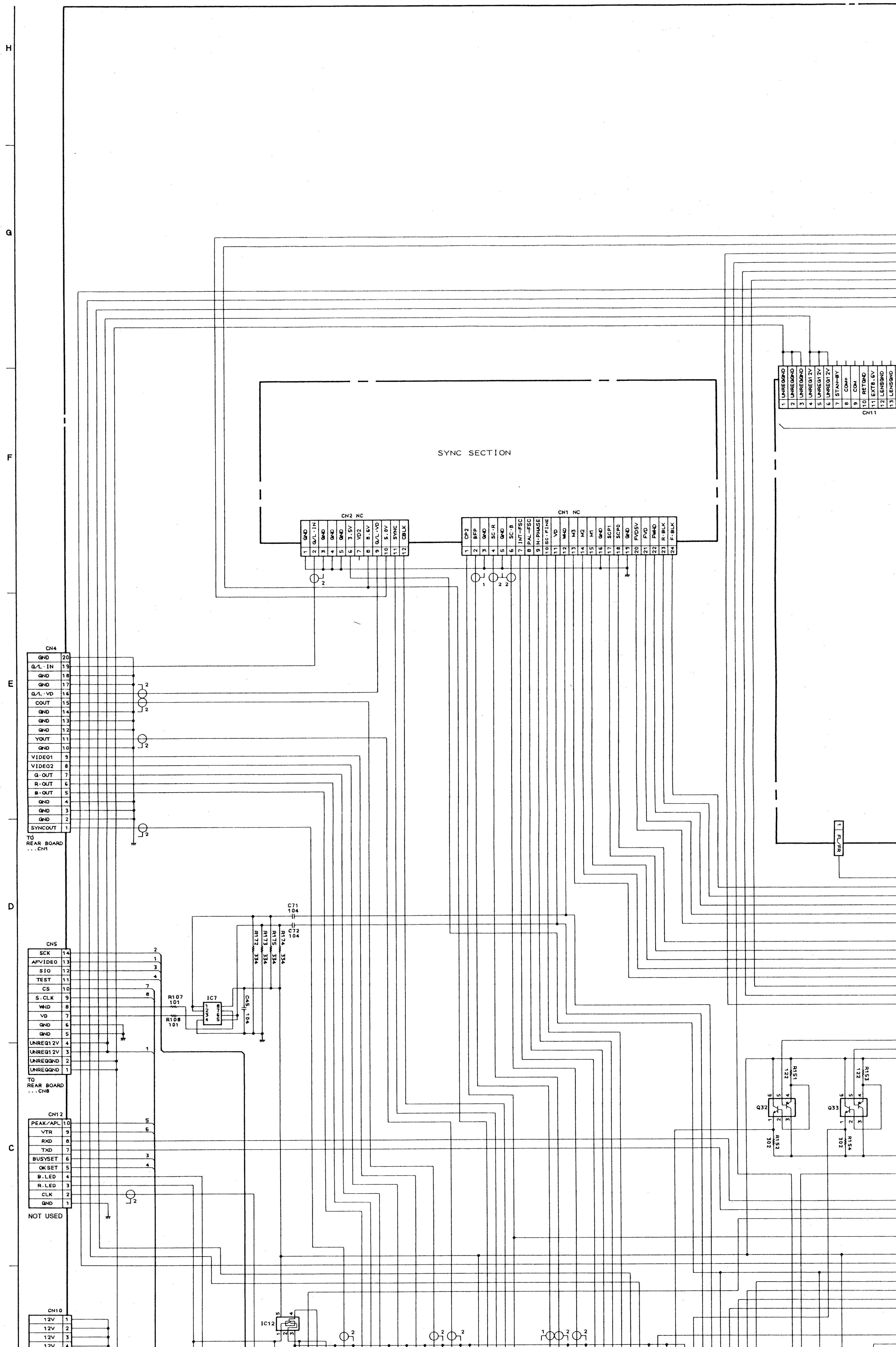


5. 2msec/DIV 0.5V/DIV



6. 2msec/DIV 0.5V/DIV





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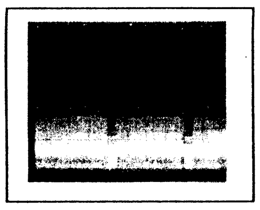
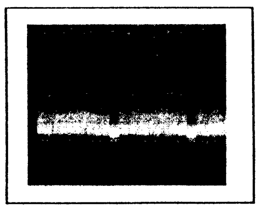
INTERFACE SECTION

IC1	H10
IC2	G10
IC3	F9
IC4	F10
IC6	A6
IC7	D1
IC8	E9
IC12	B2
IC14	C5
IC15	A7
IC16	F7
Q1	H9
Q2	H9
Q3	H9
Q4	H9
Q5	H9
Q6	G9
Q7	G9
Q9	G9
Q10	G9
Q11	G9
Q12	F9
Q13	H10
Q14	F9
Q15	F9
Q17	F9
Q18	F9
Q19	G10
Q21	F10
Q22	H10
Q23	H10
Q24	G10
Q25	G10
Q26	F10
Q27	F10
Q28	E10
Q29	E9
Q30	E9
Q31	E10
Q32	C4
Q33	C4
Q34	C5
Q35	A6
D1	E9
D2	D9

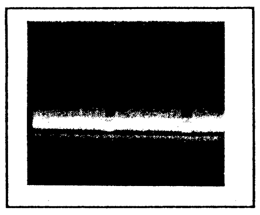
4. 2msec/DIV 0.2V/DIV



5. 2msec/DIV 0.5V/DIV



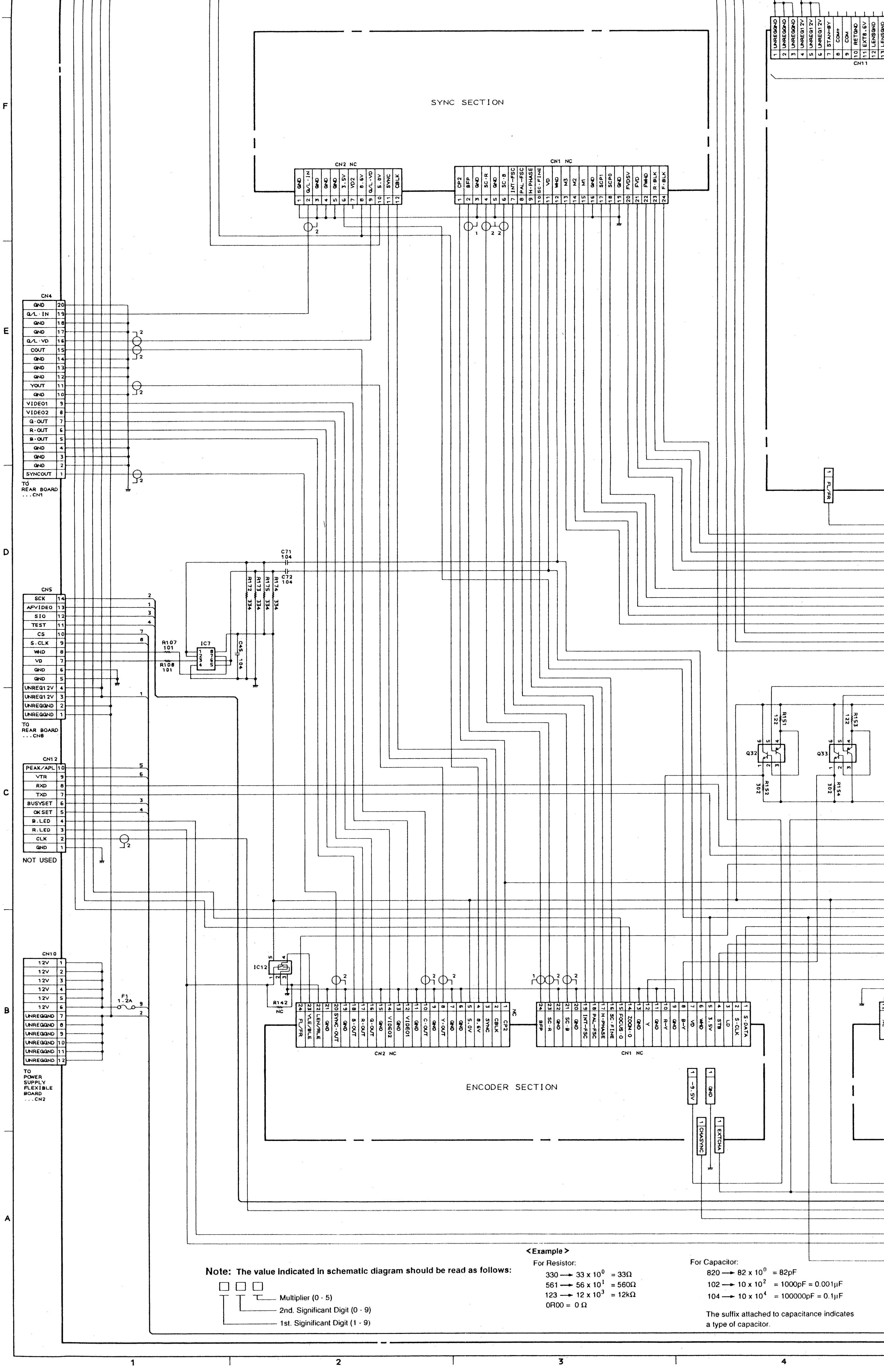
6. 2msec/DIV 0.5V/DIV



<Index>

INTERFACE SECTION

IC1	H10
IC2	G10
IC3	F9
IC4	F10
IC6	A6
IC7	D1
IC8	E9
IC12	B2
IC14	C5
IC15	A7
IC16	F7
Q1	H9
Q2	H9
Q3	H9
Q4	H9
Q5	H9
Q6	G9
Q7	G9
Q9	G9
Q10	G9
Q11	G9
Q12	F9
Q13	H10
Q14	F9
Q15	F9
Q17	F9
Q18	F9
Q19	G10
Q21	F10
Q22	H10
Q23	H10
Q24	G10
Q25	G10
Q26	F10
Q27	F10
Q28	E10
Q29	E9
Q30	E9
Q31	E10
Q32	C4
Q33	C4
Q34	C5
Q35	A6
D1	E9
D2	D9


F
E
D
C
B
A
1
2
3
4
SYNC SECTION
CN2 NC
GND
Q/L·IN
GND
GND
GND
3.5V
VD2
8.6V
Q/L·VD
5.0V
SYNC
CBLK
CN1 NC
CP2
BFP
GND
SC·R
GND
SC·B
INT-FSC
PAL-FSC
H-PHASE
SC·FINE
VD
WHD
M3
M2
M1
GND
SCP1
SCP0
GND
FVD5V
FVD
PWHD
R·BLK
F·BLK
CN11
UNREGGND
UNREGGND
UNREGGND
UNREG12V
UNREG12V
UNREG12V
STAN-BY
COM+
COM
RETGND
EXT8.6V
LENSGND
LENSGND
FL/FR
CN4
GND
Q/L·IN
GND
GND
Q/L·VD
COUT
GND
GND
GND
YOUT
GND
VIDEO1
VIDEO2
G·OUT
R·OUT
B·OUT
GND
GND
GND
SYNCOUT
TO REAR BOARD ...CN1
CN5
SCK
AFVIDEO
SIO
TEST
CS
S.CLK
WHD
VD
GND
GND
UNREG12V
UNREG12V
UNREGGND
UNREGGND
TO REAR BOARD ...CN8
C71 104
C72 104
R172 334
R173 334
R175 334
R174 334
R107 101
R108 101
IC7
C45 104
CN12
PEAK/APL
VTR
RXD
TXD
BUSYSET
OKSET
B.LED
R.LED
CLK
GND
NOT USED
R151 122
R153 122
Q32
Q33
R152 302
R154 302
CN10
12V
12V
12V
12V
12V
12V
UNREGGND
UNREGGND
UNREGGND
UNREGGND
UNREGGND
UNREGGND
TO POWER SUPPLY FLEXIBLE BOARD ...CN2
F1 1.2A
IC12
R142 NC
FL/FR
YLEE/RLEE
LEN/RLEE
GND
SYNC·OUT
GND
B·OUT
R·OUT
GND
G·OUT
GND
VIDEO2
GND
VIDEO1
GND
C·OUT
GND
Y·OUT
GND
GND
5.0V
8.6V
SYNC
CBLK
CP2
NC
CN2 NC
BFP
SC·R
GND
SC·B
GND
INT-FSC
PAL-FSC
H·PHASE
SC·FINE
FOCUS·O
ZOOM·O
GND
Y
R-Y
GND
B-Y
VD
WHD
3.5V
STB
LD
S·CLK
S·DATA
CN1 NC
ENCODER SECTION
-9.5V
GND
CHASYNC
EXTCHA

Note: The value indicated in schematic diagram should be read as follows:

☐ ☐ ☐

- Multiplier (0 - 5)
- 2nd. Significant Digit (0 - 9)
- 1st. Significant Digit (1 - 9)

<Example>

For Resistor:

330 → 33×10^0 = 33Ω
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123 → 12×10^3 = 12kΩ
0R00 = 0 Ω

For Capacitor:

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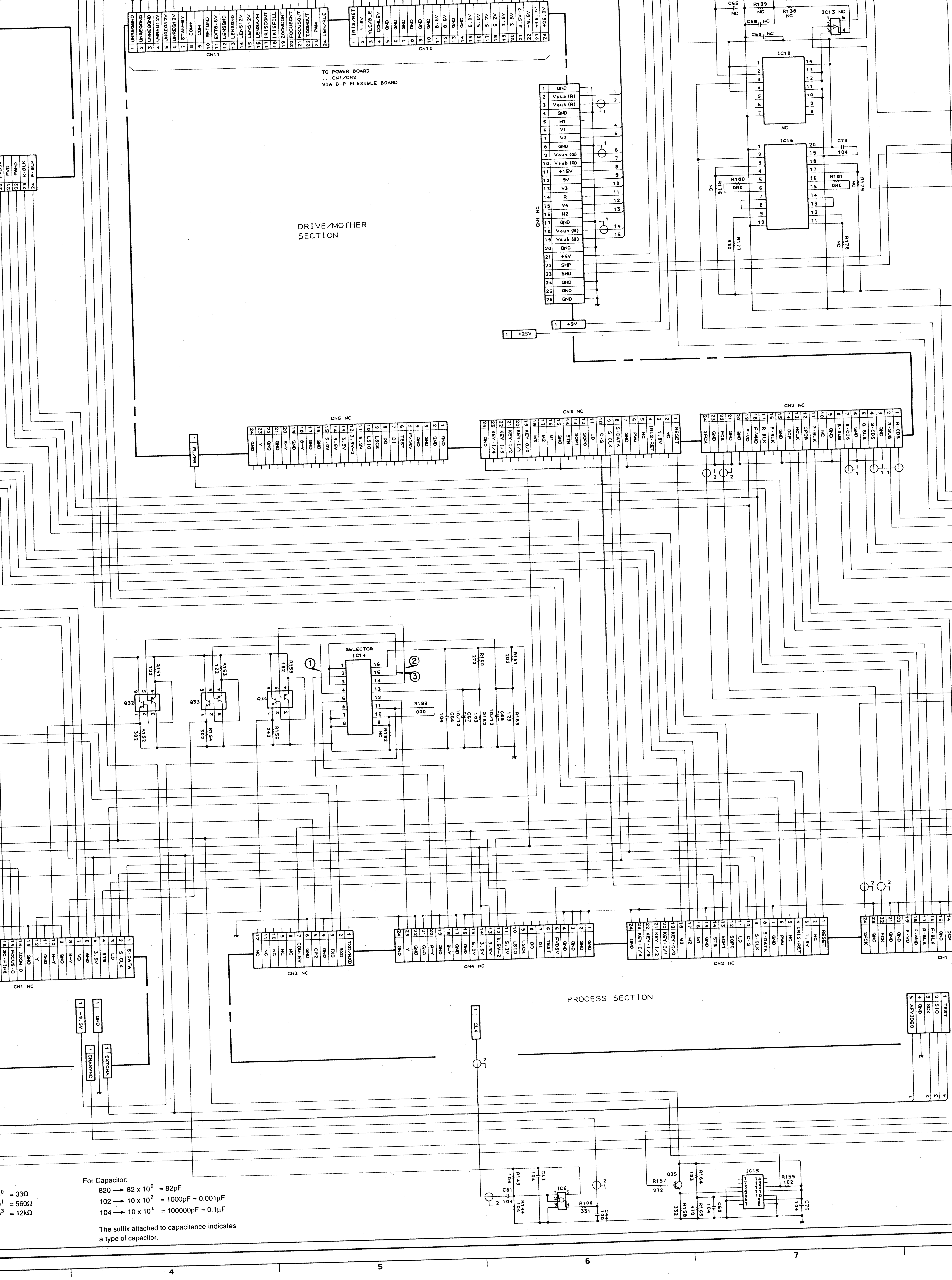
104 → 10×10^4 = 100000pF = 0.1μF

The suffix attached to capacitance indicates a type of capacitor.

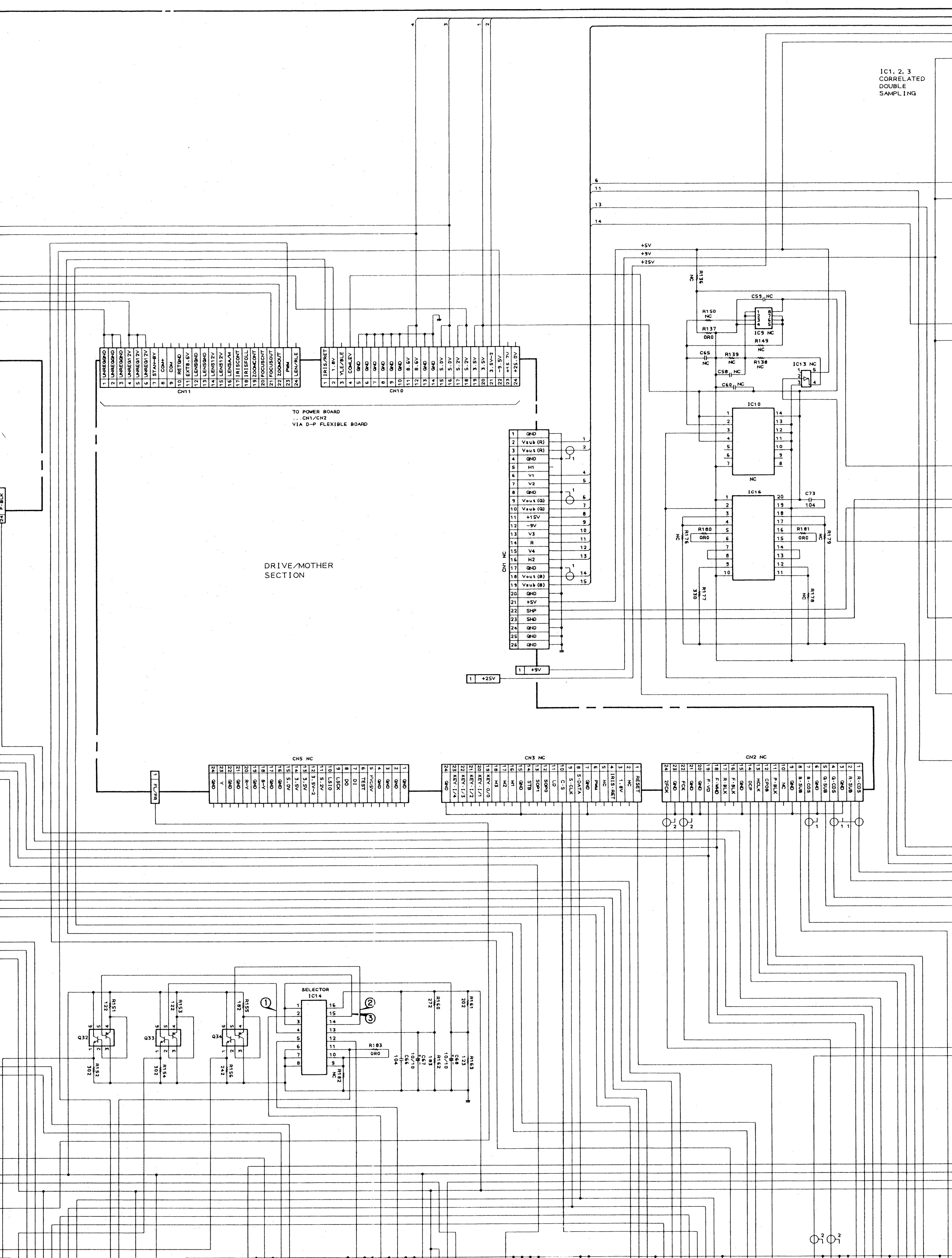

CN11
UNREGGND
UNREGGND
UNREGGND
UNREG12V
UNREG12V
UNREG12V
STAN-BY
COM+
COM
RETGND
EXT8.6V
LENSGND
LENSGND
LENS12V
LENS12V
LENSA/M
IRISCONT
IRISFOLL
ZOOMCONT
FOCUSOUT
ZOOMOUT
PWM
LEN/RLE
CN10
IRIS/RET
1.8V
YLE/BLE
COMLEV
GND
8.6V
5.0V
5.2V
3.5V
3.5V-2
-9.5V
+15V
+25V
TO POWER BOARD
...CN1/CN2
VIA D-P FLEXIBLE BOARD
CN1 NC
Vsub (R)
Vout (R)
H1
V1
V2
Vout (G)
Vsub (G)
+15V
-9V
V3
R
V4
H2
Vout (B)
Vsub (B)
+5V
SHP
SHD
+9V
+25V
DRIVE/MOTHER
SECTION
C65
NC
R139
NC
R138
NC
C58
C60
IC13 NC
IC10
IC16
C73
104
R180
0R0
R181
0R0
R176
NC
R179
NC
R177
330
R178
NC
CN5 NC
FL/FR
R-Y
B-Y
5.0V
3.5V
3.5V-2
5.2V
LS10
LSCK
DO
DI
TEST
PVDSV
CN3 NC
KEY-1/4
KEY-1/3
KEY-1/1
KEY-0/0
M3
M2
M1
STB
SOP1
SOP0
LD
C-S
S-CLK
S-DATA
PWM
NC
IRIS-RET
1.8V
RESET
CN2 NC
2FCK
FCK
F-VD
F-WHD
R-BLK
F-BLK
DCP
HCLK
CPOB
P-BLK
B-SUB
B-CDS
G-SUB
G-CDS
R-SUB
R-CDS
SELECTOR
IC14
①
②
③
Q32
Q33
Q34
R151
122
R152
302
R153
122
R154
302
R155
182
R156
242
R160
272
R161
202
R162
10/10
R163
123
R182
NC
R183
0R0
C56
104
C57
10/10
C58
103
CN1 NC
S-DATA
S-CLK
STB
3.5V
WHD
VD
B-Y
R-Y
Y
ZOOM-0
FOCUS-0
SC-FINE
GND
CN3 NC
TXD/RXD
RXD
TXD
CP2
COMLEV
CN4 NC
CN2 NC
PROCESS SECTION
TEST
SIO
SCK
AF/VIDEO
-9.5V
GND
CHASYNC
EXTCHA
CLK
R143
104
C43
104
C61
104
IC6
R144
104
R106
331
C44
100
Q35
R157
272
R164
103
R158
332
R165
472
C68
104
C69
IC15
R159
102
C70
104
4
5
6
7

^{0} = 33Ω
^{1} = 560Ω
^{3} = 12kΩ

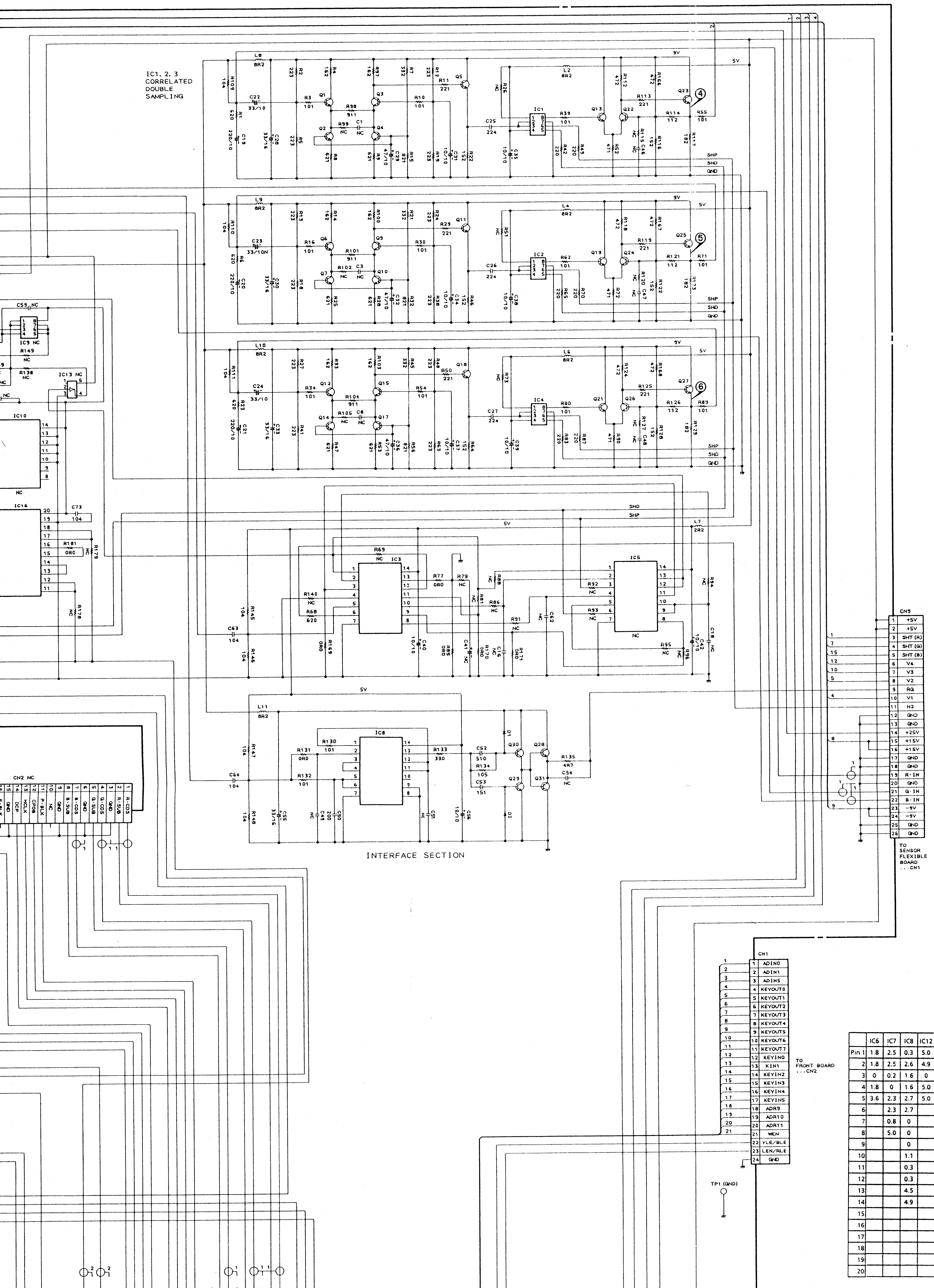
For Capacitor:
820 → 82 x 10^0 = 82pF
102 → 10 x 10^2 = 1000pF = 0.001μF
104 → 10 x 10^4 = 100000pF = 0.1μF

The suffix attached to capacitance indicates a type of capacitor.

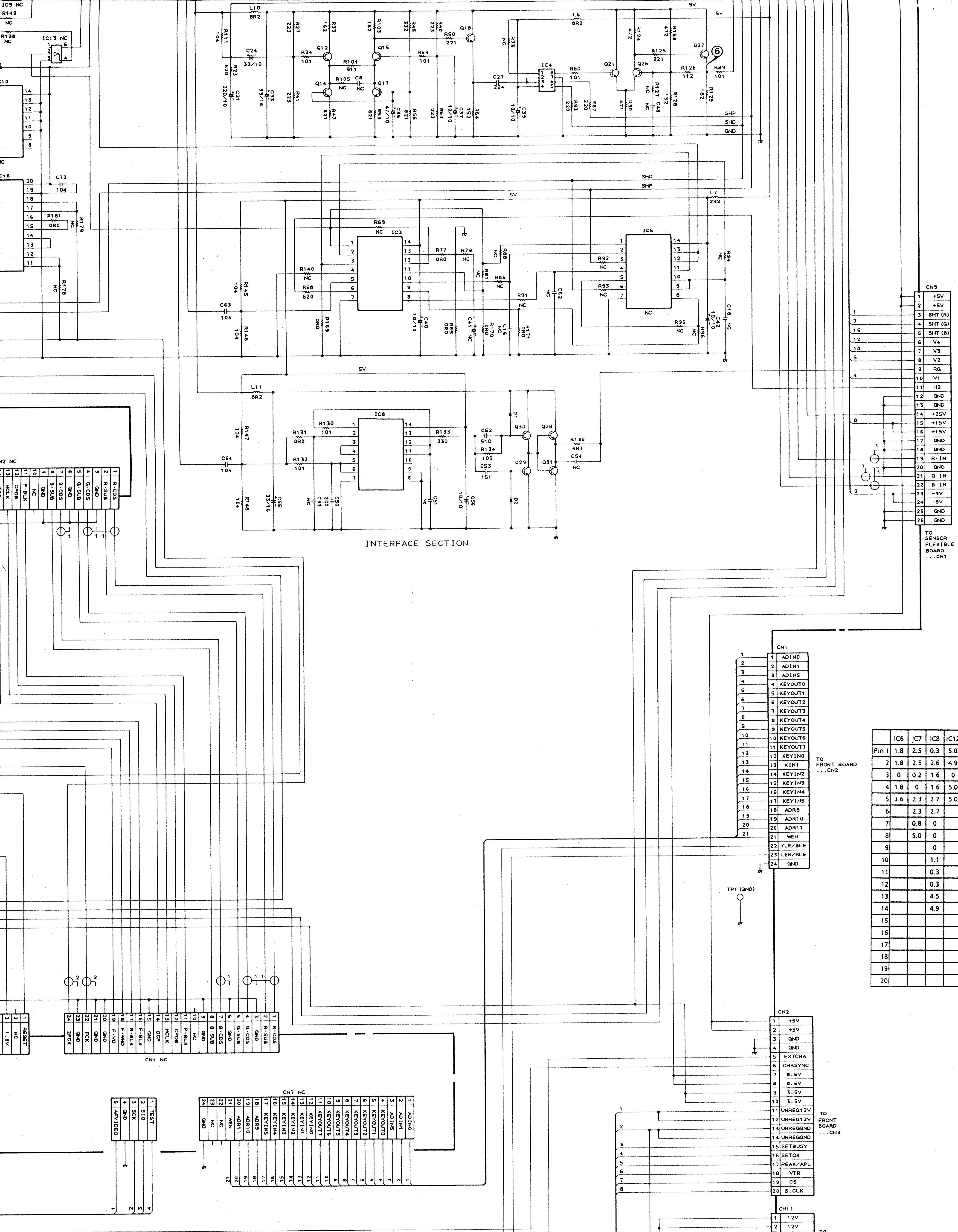
SCHEMATIC DIAGRAM OF MAIN BOARD (INTERFACE SECTION)


IC1, 2, 3
CORRELATED
DOUBLE
SAMPLING
+5V
+9V
+25V
R136 NC
C59 NC
R150 NC
IC9 NC
R137 0R0
R149 NC
C65 NC
R139 NC
R138 NC
IC13 NC
C58 NC
C60 NC
IC10
IC16
C73 104
R180 0R0
R181 0R0
R176 NC
R179 NC
R177 330
R178 NC
UNREGGND
UNREG12V
STAN-BY
COM+
COM
RETGND
EXT8.6V
LENSGND
LENS12V
LENSA/M
IRISCONT
IRISFOLL
ZOOMCONT
FOCUSOUT
ZOOMOUT
PWM
LEN/ALE
CN11
IRIS/RET
1.8V
YLE/BLE
COMLEV
GND
8.6V
5.0V
5.2V
3.5V
3.5V-2
-9.5V
+15.7V
+25.0V
CN10
TO POWER BOARD
...CN1/CN2
VIA D-P FLEXIBLE BOARD
DRIVE/MOTHER
SECTION
CN1 NC
GND
Vsub (R)
Vout (R)
H1
V1
V2
Vout (G)
Vsub (G)
+15V
-9V
V3
R
V4
H2
Vout (B)
Vsub (B)
+5V
SHP
SHD
+9V
+25V
F-BLK
FL/FR
CN5 NC
Y
R-Y
B-Y
5.0V
3.5V
3.5V-2
5.2V
LS10
LSCK
DO
DI
TEST
FVGSV
CN3 NC
KEY-1/4
KEY-1/3
KEY-1/2
KEY-1/1
KEY-0/0
M3
M2
M1
STB
SOP0
SOP1
LD
C-S
S-CLK
S-DATA
NC
IRIS-RET
1.8V
RESET
CN2 NC
2FCK
FCK
F-VD
F-WHD
F-BLK
R-BLK
DCP
HCLK
CPOB
P-BLK
B-SUB
B-CDS
G-CDS
G-SUB
R-SUB
R-CDS
SELECTOR
IC14
①
②
③
R151 122
R153 122
R155 182
R152 302
R154 302
R156 242
Q32
Q33
Q34
R183 0R0
R182 NC
R160 272
R161 202
C66 104
C67 10/10
R162 183
C68 10/10
R163 123

CE SECTION)


IC1, 2, 3
CORRELATED
DOUBLE
SAMPLING
IC1
IC2
IC4
IC3
IC5
IC8
IC9 NC
IC10
IC13 NC
IC16
9V
5V
SHP
SHD
GND
INTERFACE SECTION
CN2 NC
1 R·CDS
2 R·SUB
3 GND
4 G·CDS
5 G·SUB
6 GND
7 B·CDS
8 B·SUB
9 GND
10 NC
11 P·BLK
12 CPOB
13 HCLK
14 DCP
15 GND
CN9
1 +5V
2 +5V
3 SHT (R)
4 SHT (G)
5 SHT (B)
6 V4
7 V3
8 V2
9 RG
10 V1
11 H2
12 GND
13 GND
14 +25V
15 +15V
16 +15V
17 GND
18 GND
19 R·IN
20 GND
21 G·IN
22 B·IN
23 −9V
24 −9V
25 GND
26 GND
TO
SENSOR
FLEXIBLE
BOARD
...CN1
CN1
1 ADIN0
2 ADIN1
3 ADIN5
4 KEYOUT0
5 KEYOUT1
6 KEYOUT2
7 KEYOUT3
8 KEYOUT4
9 KEYOUT5
10 KEYOUT6
11 KEYOUT7
12 KEYIN0
13 KIN1
14 KEYIN2
15 KEYIN3
16 KEYIN4
17 KEYIN5
18 ADR9
19 ADR10
20 ADR11
21 WEN
22 YLE/BLE
23 LEN/RLE
24 GND
TO
FRONT BOARD
...CN2
TP1 (GND)

	IC6	IC7	IC8	IC12	IC14	IC15
Pin 1	1.8	2.5	0.3	5.0	3.1	-
2	1.8	2.5	2.6	4.9	3.0	-
3	0	0.2	1.6	0	3.1	0
4	1.8	0	1.6	5.0	3.0	0
5	3.6	2.3	2.7	5.0	3.0	1.0
6		2.3	2.7		0	0
7		0.8	0		0	-
8		5.0	0		0	0
9			0		0.3	5.0
10			1.1		0.3	0
11			0.3		0.3	5.0
12			0.3		2.8	0.3
13			4.5		3.1	-
14			4.9		2.8	-
15					3.0	
16					3.6	
17						
18						
19						
20						

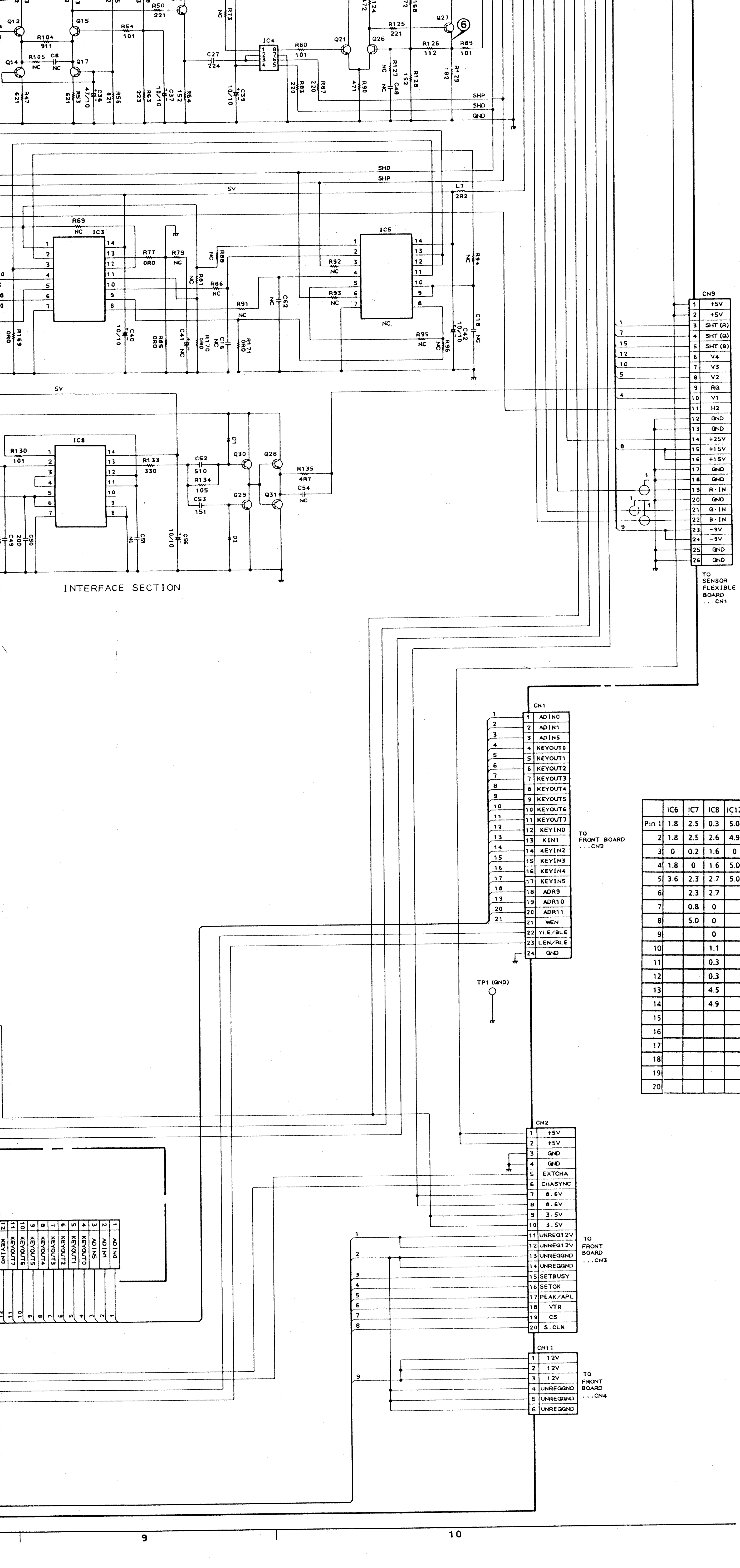

IC9 NC
R149
R138 NC
IC13 NC
IC10
IC16
C73 104
R181 0R0
R179 NC
R178 NC
L10 8R2
R111 104
R27 223
R33 162
R103 162
R45 332
R48 223
R50 221
Q18
C24 33/10
R34 101
Q12
Q15
R54 101
R104 911
R23 620
C21 220/10
C33 33/16
R41 223
R105 NC
C8 NC
Q14
Q17
R47 621
R53 621
C36 47/10
R56 821
R63 223
C37 10/10
R64 152
L6 8R2
R73 NC
C27 224
IC4
C39 10/10
R83 220
R80 101
R87 220
Q21
R90 471
R124 472
R168 472
R125 221
Q26
C48 NC
R127 152
R128
R126 112
Q27
⑥
R89 101
R129 182
9V
5V
SHP
SHD
GND
SHD
SHP
L7 2R2
R69 NC
IC3
R77 0R0
R79 NC
R88 NC
R81 NC
R86 NC
R140 NC
R68 620
R145 104
C63 104
R146 104
R169 0R0
C40 10/10
R85 0R0
C41 NC
R170 0R0
C16 NC
R171 0R0
R91 NC
C62 NC
IC5
R92 NC
R93 NC
R94 NC
R95 NC
R96 NC
C42 10/10
C18 NC
L11 8R2
R147 104
R130 101
IC8
R131 0R0
R132 101
R133 330
C64 104
R148 104
C55 33/16
C49 NC
C43 200
C50
C51 NC
C56 10/10
C52 510
R134 105
C53 151
Q30
Q28
Q29
Q31
R135 4R7
C54 NC
D1
D1
INTERFACE SECTION
CN2 NC
R-CDS
R-SUB
GND
G-SUB
G-CDS
B-CDS
B-SUB
GND
NC
P-BLK
CPOB
HCLK
CN9
1 +5V
2 +5V
3 SHT (R)
4 SHT (G)
5 SHT (B)
6 V4
7 V3
8 V2
9 RG
10 V1
11 H2
12 GND
13 GND
14 +25V
15 +15V
16 +15V
17 GND
18 GND
19 R-IN
20 GND
21 G-IN
22 B-IN
23 -9V
24 -9V
25 GND
26 GND
TO SENSOR FLEXIBLE BOARD ...CN1
CN1
1 ADIN0
2 ADIN1
3 ADIN5
4 KEYOUT0
5 KEYOUT1
6 KEYOUT2
7 KEYOUT3
8 KEYOUT4
9 KEYOUT5
10 KEYOUT6
11 KEYOUT7
12 KEYIN0
13 KIN1
14 KEYIN2
15 KEYIN3
16 KEYIN4
17 KEYIN5
18 ADR9
19 ADR10
20 ADR11
21 WEN
22 YLE/BLE
23 LEN/RLE
24 GND
TO FRONT BOARD ...CN2
TP1 (GND)
CN2
1 +5V
2 +5V
3 GND
4 GND
5 EXTCHA
6 CHASYNC
7 8.6V
8 8.6V
9 3.5V
10 3.5V
11 UNREG12V
12 UNREG12V
13 UNREGGND
14 UNREGGND
15 SETBUSY
16 SETOK
17 PEAK/APL
18 VTR
19 CS
20 S.CLK
TO FRONT BOARD ...CN3
CN11
1 12V
2 12V
3 12V
4 UNREGGND
5 UNREGGND
6 UNREGGND
TO FRONT BOARD ...CN4
RESET
1.8V
NC
24 2FCK
23 GND
22 FCK
21 GND
20 GND
19 F.VD
18 F.WHD
17 R.BLK
16 F.BLK
15 GND
14 DCP
13 HCLK
12 CPOB
11 P-BLK
10 NC
9 GND
8 B-SUB
7 B-CDS
6 GND
5 G-SUB
4 G-CDS
3 GND
2 R.SUB
1 R.CDS
CN1 NC
5 AFVIDEO
4 GND
3 SCK
2 SIO
1 TEST
CN7 NC
24 GND
23 NC
22 NC
21 WEN
20 ADR11
19 ADR10
18 ADR9
17 KEYIN5
16 KEYIN4
15 KEYIN3
14 KEYIN2
13 KEYIN1
12 KEYIN0
11 KEYOUT7
10 KEYOUT6
9 KEYOUT5
8 KEYOUT4
7 KEYOUT3
6 KEYOUT2
5 KEYOUT1
4 KEYOUT0
3 ADIN5
2 ADIN1
1 ADIN0
8
9
10

INTERFA

	IC1	IC
Pin 1	2.3	2.
2	2.6	2.
3	2.6	2.
4	4.9	4.
5	1.3	1.
6	1.3	1.
7	0	0
8	2.1	2.
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

	IC6	IC7	IC8	IC12	IC14	IC15	IC16	Q3
Pin 1	1.8	2.5	0.3	5.0	3.1	-	0	3.
2	1.8	2.5	2.6	4.9	3.0	-	1.6	3.
3	0	0.2	1.6	0	3.1	0	1.6	0
4	1.8	0	1.6	5.0	3.0	0	1.6	3.
5	3.6	2.3	2.7	5.0	3.0	1.0	1.8	3.
6		2.3	2.7		0	0	1.8	5.
7		0.8	0		0	-	1.9	
8		5.0	0		0	0	1.9	
9			0		0.3	5.0	2.0	
10			1.1		0.3	0	0	
11			0.3		0.3	5.0	2.0	
12			0.3		2.8	0.3	2.0	
13			4.5		3.1	-	1.9	
14			4.9		2.8	-	1.9	
15					3.0		1.7	
16					3.6		1.7	
17							1.6	
18							1.6	
19							0	
20							3.6	

	B
Q1	4.
2	1.
3	4.
4	1.
5	5.
6	4.
7	1.
9	3.
10	1.
11	5.
12	4.
13	2.
14	1.
15	4.
17	1.
18	5.
21	2.
22	2.
23	2.
24	2.
25	2.
26	2.
27	2
28	1
29	0
30	8
31	1
35	

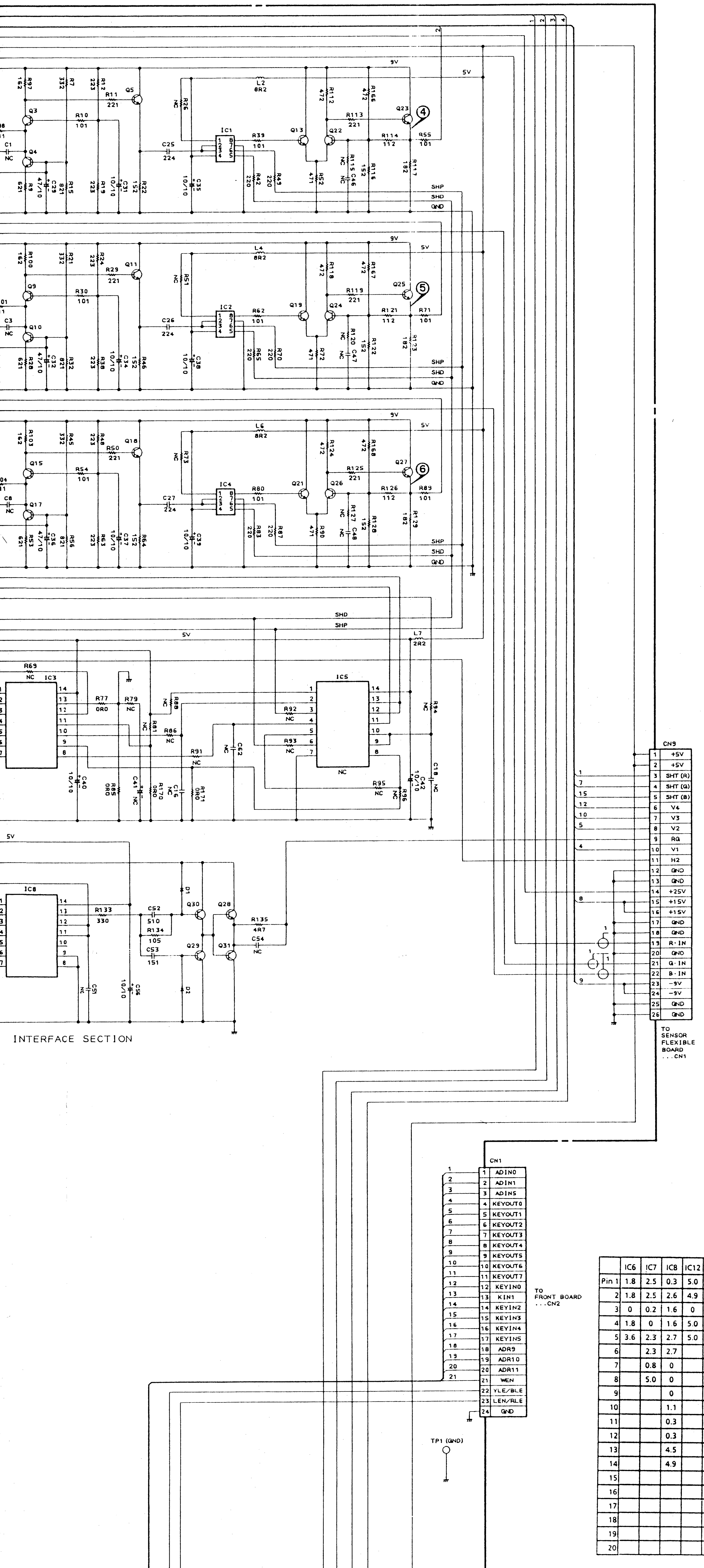

Q12
Q14
Q15
Q17
R104
911
R105
NC
C8
NC
R47
621
R53
621
C36
47/10
R56
821
R54
101
R50
221
R63
223
C37
10/10
R64
152
R73
C27
224
IC4
C39
10/10
R80
101
R83
220
R87
220
Q21
Q26
R90
471
R125
221
R127
NC
C48
NC
R128
152
R126
112
Q27
⑥
R89
101
R129
182
SHP
SHD
GND
SHD
SHP
5V
L7
2R2
R69
NC
IC3
R77
0R0
R79
NC
R88
NC
R81
NC
R86
NC
R91
NC
C62
NC
C40
10/10
R85
0R5
C41
NC
R170
0R0
C16
NC
R171
0R0
R169
0R0
IC5
R92
NC
R93
NC
NC
R94
NC
C42
10/10
C18
NC
R95
NC
R96
NC
5V
IC8
R130
101
R133
330
C52
510
R134
105
C53
151
Q30
Q29
Q28
Q31
D1
D2
R135
4R7
C54
NC
C49
C50
200
C51
NC
C56
10/10
INTERFACE SECTION
CN9
+5V
+5V
SHT (R)
SHT (G)
SHT (B)
V4
V3
V2
RG
V1
H2
GND
GND
+25V
+15V
+15V
GND
GND
R·IN
GND
G·IN
B·IN
-9V
-9V
GND
GND
TO SENSOR FLEXIBLE BOARD ...CN1
CN1
ADIN0
ADIN1
ADIN5
KEYOUT0
KEYOUT1
KEYOUT2
KEYOUT3
KEYOUT4
KEYOUT5
KEYOUT6
KEYOUT7
KEYIN0
KIN1
KEYIN2
KEYIN3
KEYIN4
KEYIN5
ADR9
ADR10
ADR11
WEN
YLE/BLE
LEN/RLE
GND
TO FRONT BOARD ...CN2
TP1 (GND)
CN2
+5V
+5V
GND
GND
EXTCHA
CHASYNC
8.6V
8.6V
3.5V
3.5V
UNREG12V
UNREG12V
UNREGGND
UNREGGND
SETBUSY
SETOK
PEAK/APL
VTR
CS
S.CLK
TO FRONT BOARD ...CN3
CN11
12V
12V
12V
UNREGGND
UNREGGND
UNREGGND
TO FRONT BOARD ...CN4
ADIN0
ADIN1
ADIN5
KEYOUT0
KEYOUT1
KEYOUT2
KEYOUT3
KEYOUT4
KEYOUT5
KEYOUT6
KEYOUT7
KEYIN0
9
10

INTERFACE BOARD

	IC1	IC2	IC3	IC4
Pin 1	2.3	2.4	0.5	2.3
2	2.6	2.6	4.9	2.6
3	2.6	2.6	0	2.6
4	4.9	4.9	4.9	4.9
5	1.3	1.3	2.8	1.3
6	1.3	1.3	2.2	1.3
7	0	0	0	0
8	2.1	2.2	4.9	2.1
9			0	
10			4.9	
11			0	
12			4.9	
13			0	
14			4.9	
15				
16				
17				
18				
19				
20				

	IC6	IC7	IC8	IC12	IC14	IC15	IC16	Q32	Q33	A34
Pin 1	1.8	2.5	0.3	5.0	3.1	-	0	3.0	3.1	2.8
2	1.8	2.5	2.6	4.9	3.0	-	1.6	3.7	3.7	3.4
3	0	0.2	1.6	0	3.1	0	1.6	0	0	0
4	1.8	0	1.6	5.0	3.0	0	1.6	3.7	3.7	3.4
5	3.6	2.3	2.7	5.0	3.0	1.0	1.8	3.0	3.0	2.8
6		2.3	2.7		0	0	1.8	5.0	5.0	5.0
7		0.8	0		0	-	1.9			
8		5.0	0		0	0	1.9			
9			0		0.3	5.0	2.0			
10			1.1		0.3	0	0			
11			0.3		0.3	5.0	2.0			
12			0.3		2.8	0.3	2.0			
13			4.5		3.1	-	1.9			
14			4.9		2.8	-	1.9			
15					3.0		1.7			
16					3.6		1.7			
17							1.6			
18							1.6			
19							0			
20							3.6			

	B	C	E
Q1	4.0	5.8	3.2
2	1.7	3.2	1.0
3	4.0	5.7	3.2
4	1.7	3.2	1.0
5	5.7	8.4	4.9
6	4.0	5.6	3.2
7	1.7	3.2	1.1
9	3.9	5.7	3.2
10	1.7	3.2	1.1
11	5.7	8.4	4.9
12	4.0	5.7	3.2
13	2.1	8.4	1.3
14	1.7	3.2	1.1
15	4.0	5.6	3.2
17	1.7	3.2	1.1
18	5.6	8.4	4.8
21	2.1	8.4	1.4
22	2.1	2.8	1.3
23	2.8	8.4	2.1
24	2.2	2.9	1.4
25	2.9	8.4	2.3
26	2.1	2.8	1.4
27	2.8	8.4	2.2
28	1.8	8.4	1.2
29	0.3	1.8	0
30	8.2	1.8	8.4
31	1.8	0	1.2
35	-	5.0	0

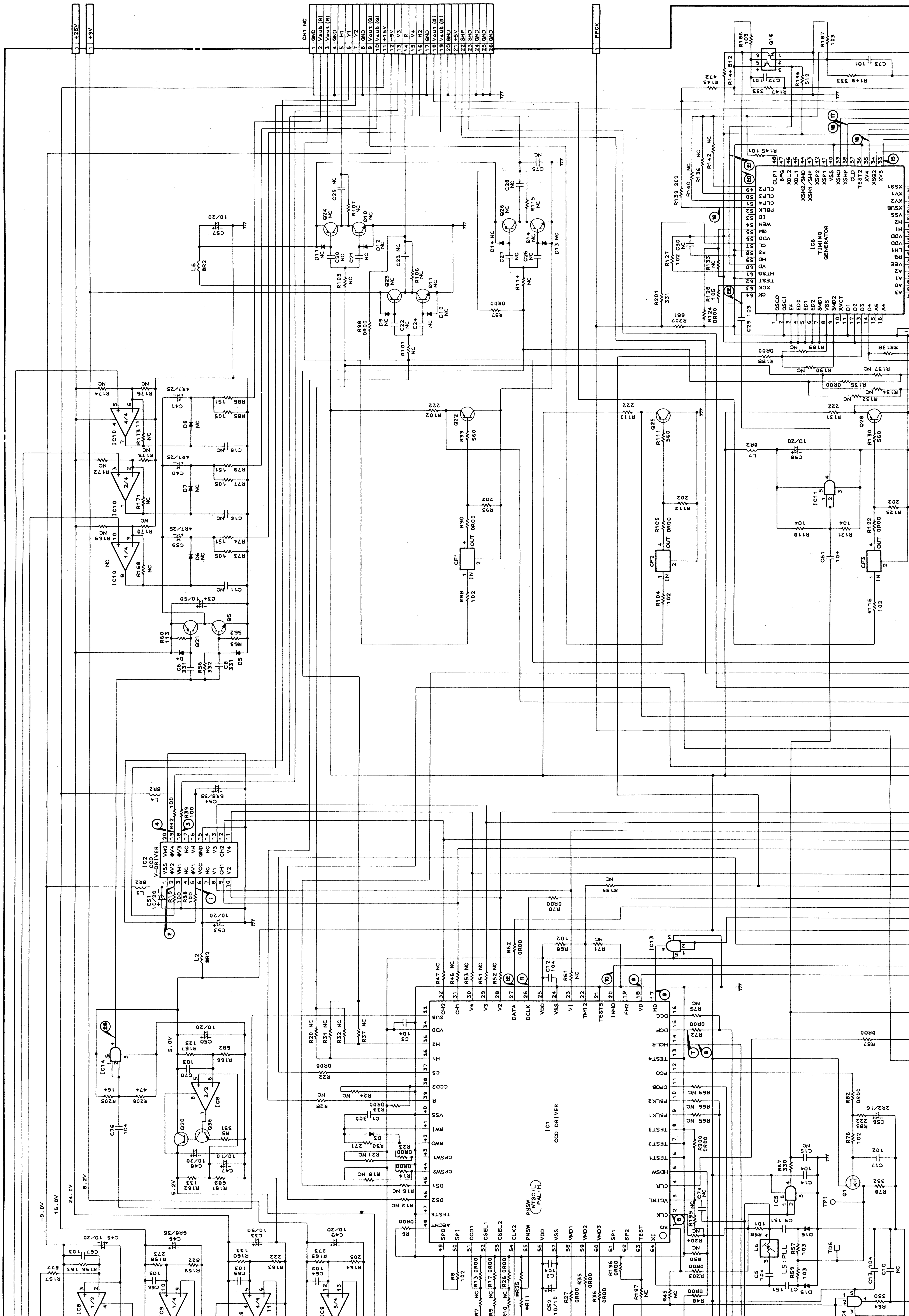

INTERFACE SECTION
IC1
IC2
IC3
IC4
IC5
IC8
CN9
1 +5V
2 +5V
3 SHT (R)
4 SHT (G)
5 SHT (B)
6 V4
7 V3
8 V2
9 RG
10 V1
11 H2
12 GND
13 GND
14 +25V
15 +15V
16 +15V
17 GND
18 GND
19 R·IN
20 GND
21 G·IN
22 B·IN
23 −9V
24 −9V
25 GND
26 GND
TO SENSOR FLEXIBLE BOARD ...CN1
CN1
1 ADIN0
2 ADIN1
3 ADIN5
4 KEYOUT0
5 KEYOUT1
6 KEYOUT2
7 KEYOUT3
8 KEYOUT4
9 KEYOUT5
10 KEYOUT6
11 KEYOUT7
12 KEYIN0
13 KIN1
14 KEYIN2
15 KEYIN3
16 KEYIN4
17 KEYIN5
18 ADR9
19 ADR10
20 ADR11
21 WEN
22 YLE/BLE
23 LEN/RLE
24 GND
TO FRONT BOARD ...CN2
TP1 (GND)
SHP
SHD
GND
9V
5V
④
⑤
⑥

INTERFACE BOARD

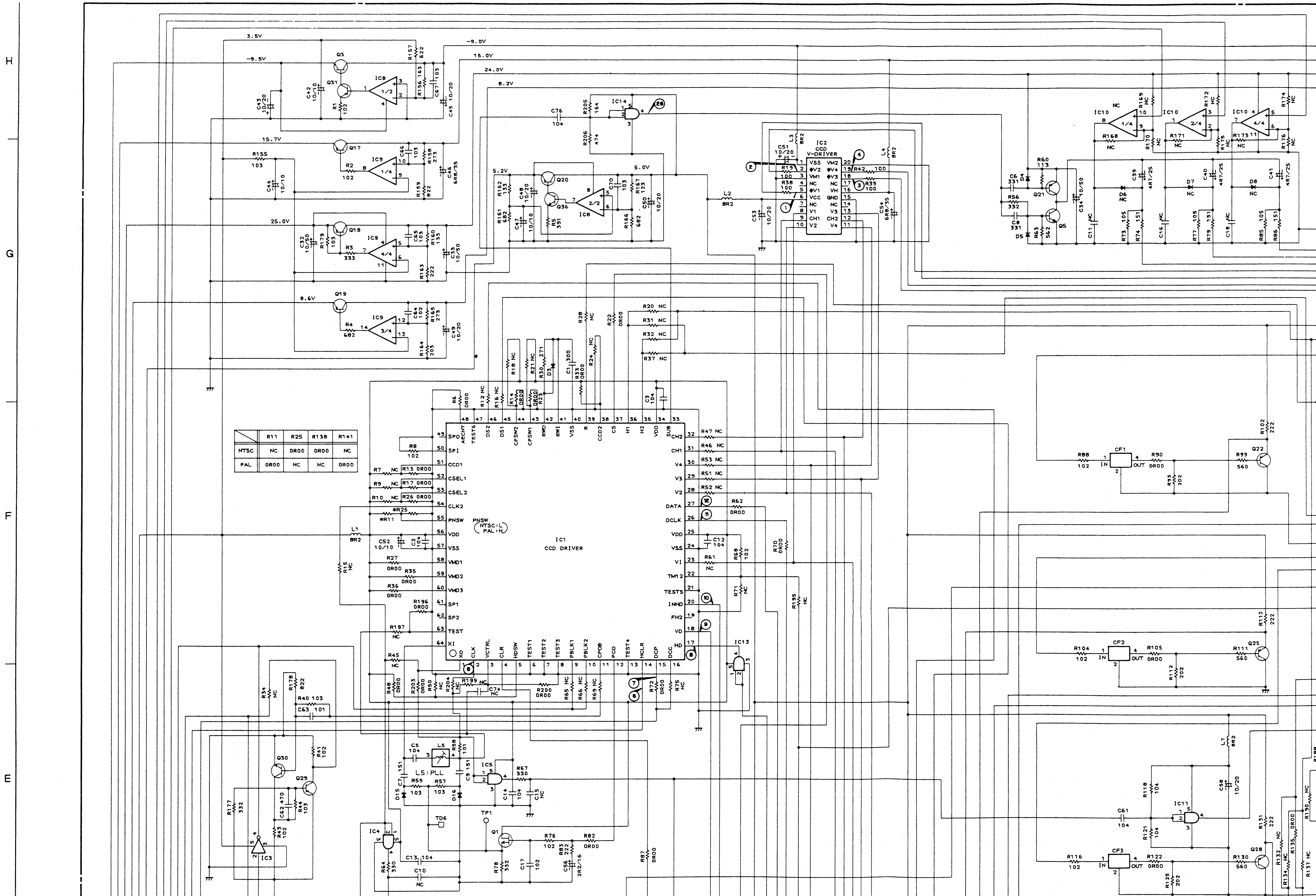
	IC1	IC2	IC3	IC4
Pin 1	2.3	2.4	0.5	2.3
2	2.6	2.6	4.9	2.6
3	2.6	2.6	0	2.6
4	4.9	4.9	4.9	4.9
5	1.3	1.3	2.8	1.3
6	1.3	1.3	2.2	1.3
7	0	0	0	0
8	2.1	2.2	4.9	2.1
9			0	
10			4.9	
11			0	
12			4.9	
13			0	
14			4.9	
15				
16				
17				
18				
19				
20				

	IC6	IC7	IC8	IC12	IC14	IC15	IC16	Q32	Q33	A34
Pin 1	1.8	2.5	0.3	5.0	3.1	-	0	3.0	3.1	2.8
2	1.8	2.5	2.6	4.9	3.0	-	1.6	3.7	3.7	3.4
3	0	0.2	1.6	0	3.1	0	1.6	0	0	0
4	1.8	0	1.6	5.0	3.0	0	1.6	3.7	3.7	3.4
5	3.6	2.3	2.7	5.0	3.0	1.0	1.8	3.0	3.0	2.8
6		2.3	2.7		0	0	1.8	5.0	5.0	5.0
7		0.8	0		0	-	1.9			
8		5.0	0		0	0	1.9			
9			0		0.3	5.0	2.0			
10			1.1		0.3	0	0			
11			0.3		0.3	5.0	2.0			
12			0.3		2.8	0.3	2.0			
13			4.5		3.1	-	1.9			
14			4.9		2.8	-	1.9			
15					3.0		1.7			
16					3.6		1.7			
17							1.6			
18							1.6			
19							0			
20							3.6			

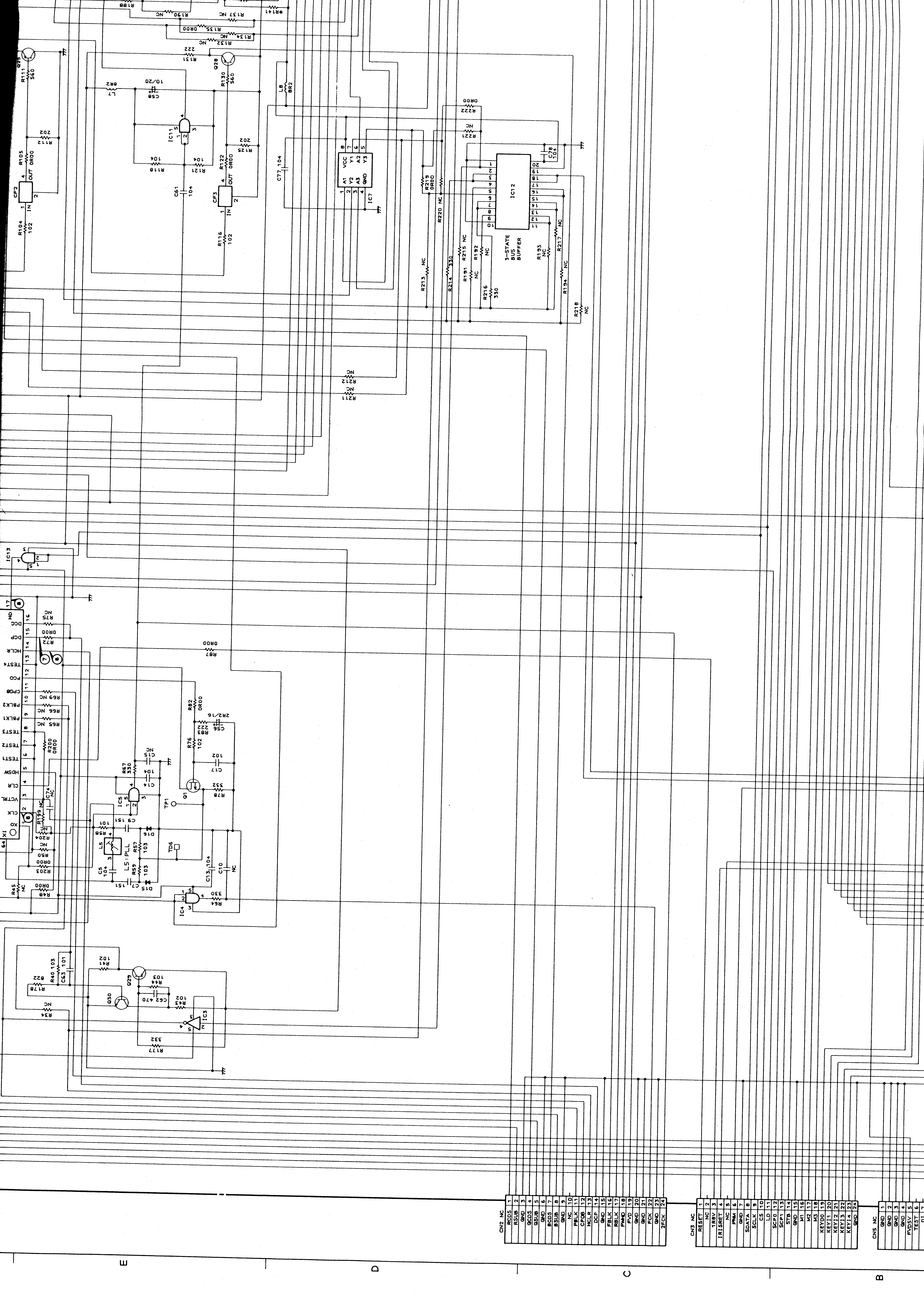
SC


+25V
+9V
CN1 NC
GND
Vsub (R)
Vout (R)
GND
H1
V1
V2
GND
Vout (G)
Vsub (G)
+15V
-9V
V3
R
V4
H2
Vout (B)
Vsub (B)
GND
+5V
SHP
SHD
GND
GND
GND
FFCK
IC6 TIMING GENERATOR
IC1 CCD DRIVER
IC2 CCD V-DRIVER
IC10
IC11
IC13
IC14
IC5
IC8
IC9
CF1
CF2
CF3
Q16
Q22
Q25
Q28
Q21
Q5
Q20
Q36
Q1
L5 PLL
PNSW NTSC:L PAL:H
TP1
TD6
X1
-9.0V
15.0V
24.0V
8.2V
5.0V
5.2V

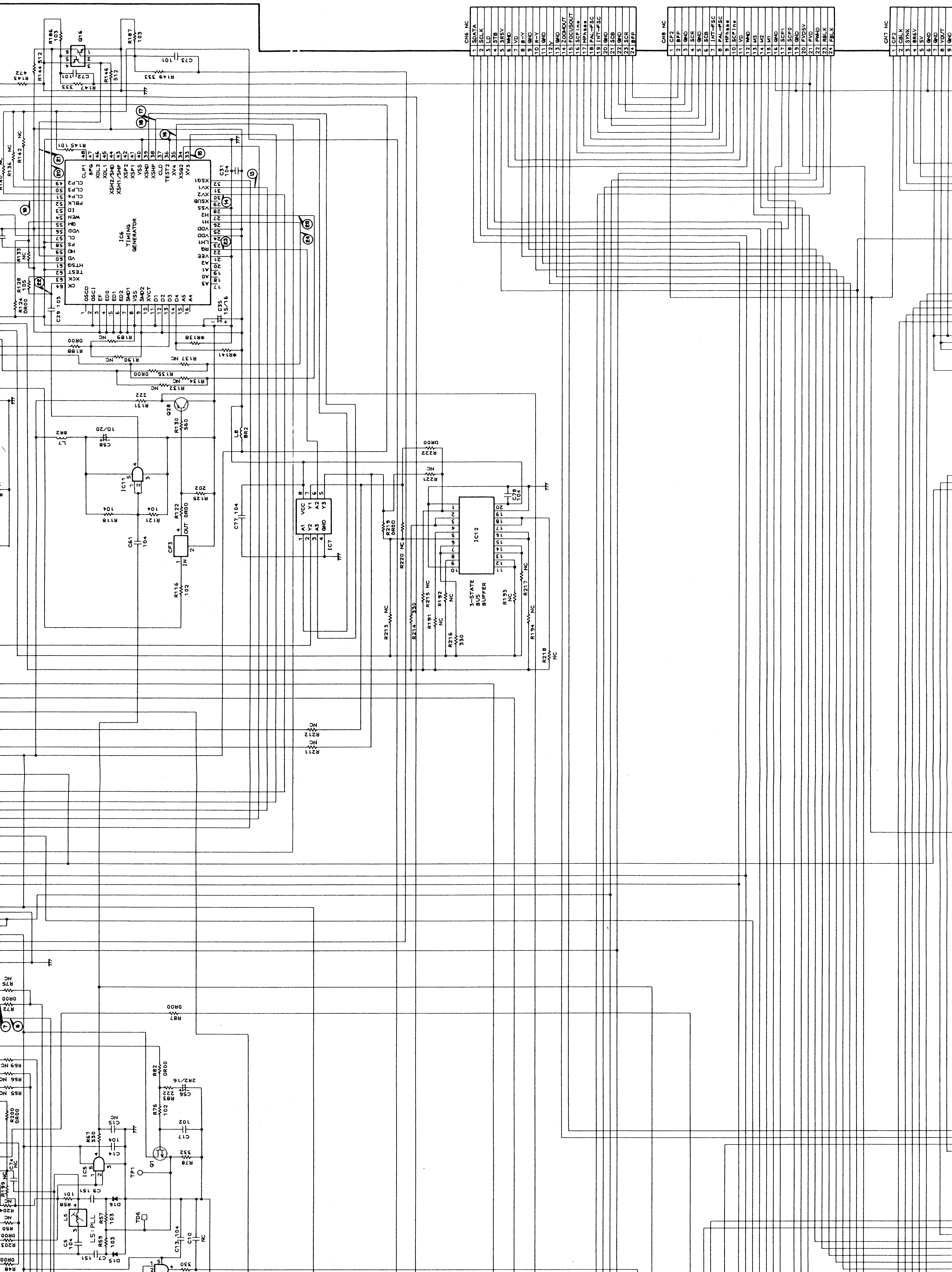
DRIVE/MOTHER SECTION


H
G
F
E
IC1
CCD DRIVER
IC2
CCD
V-DRIVER
IC8
IC9
IC10
IC14
IC13
IC5
IC4
IC3
IC11
CF1
CF2
CF3
L5:PLL
PNSW (NTSC:L PAL:H)
TP1
TD6
3.5V
-9.5V
-9.0V
15.0V
24.0V
8.2V
15.7V
25.0V
8.6V
5.2V
5.0V

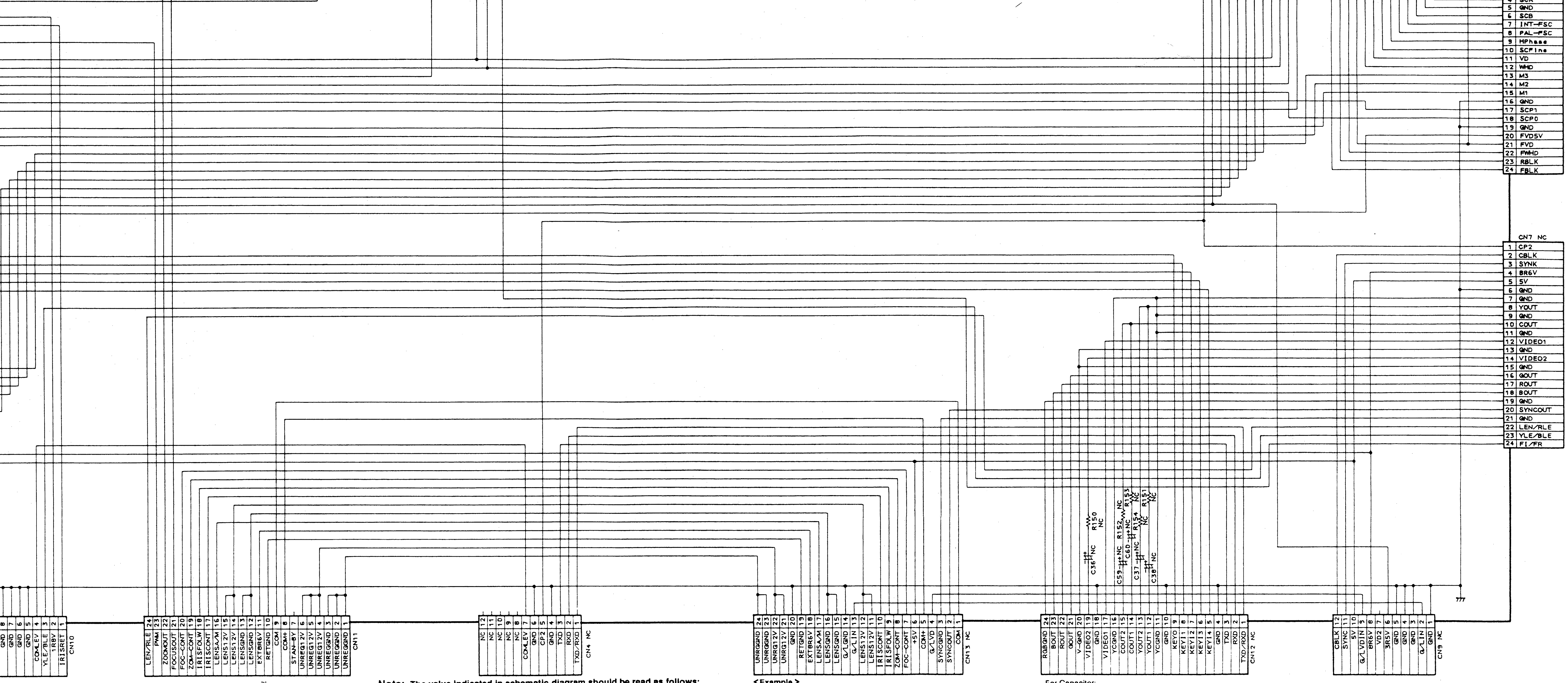
	R11	R25	R138	R141
NTSC	NC	0R00	0R00	NC
PAL	0R00	NC	NC	0R00


Q25
R111 560
R105 0R00
R112 202
CF2 IN OUT
R104 102
R131 222
R132 NC
R134 NC
R135 0R00
R137 NC
R190 NC
R188
*R141
Q28
R130 560
L7 6R2
C58 10/20
IC11
R118 104
R121 104
R122 0R00
R125 202
CF3 IN OUT
C61 104
R116 102
L8 8R2
C77 104
IC7
VCC A1 Y2 A3 GND Y1 A2 Y3
R219 0R00
R220 NC
R222 0R00
R221 NC
C78 104
IC12
3-STATE BUS BUFFER
R213 NC
R214 330
R215 NC
R191 NC
R192 NC
R216 330
R193 NC
R217 NC
R194 NC
R218 NC
R212 NC
R211 NC
IC13
HD DCC DCP HCLR TEST4 PCO CPOB PBLK2 PBLK1 TEST3 TEST2 TEST1 HDSW CLR VCTRL CLK XO XI
R75 NC
R72 0R00
R87 0R00
R69 NC
R66 NC
R65 NC
R200 0R00
C74 NC
R199 NC
R204 NC
R50 NC
R203 0R00
R45 NC
R48 0R00
R82 0R00
R76 102
R81 NC
C56 2R2/16
C17 102
Q1
R78 332
TP1
R67 330
C15 NC
C14 104
IC5
R58 101
C9 151
D16
L5
L5: PLL
R57 103
R59 103
C5 104
C7 151
D15
TD6
C13 104
C10 NC
IC4
R64 330
C63 101
R40 103
R41 102
Q29
R44 103
R178 822
Q30
C62 470
R43 102
IC3
R34 NC
R177 332
CN2 NC
RCDS 1
RSUB 2
GND 3
GCDS 4
GSUB 5
GND 6
BCDS 7
BSUB 8
GND 9
NC 10
PBLK 11
CPOB 12
HCLR 13
DCP 14
GND 15
FBLK 16
FBLK 17
PHMD 18
FVD 19
GND 20
GND 21
FCK 22
GND 23
2FCK 24
CN3 NC
RESET 1
NC 2
1RBV 3
IRISRET 4
NC 5
PMM 6
GND 7
SDATA 8
SCLK 9
CS 10
LD 11
SCP0 12
SCP1 13
STB 14
GND 15
M1 16
M2 17
M3 18
KEY00 19
KEY11 20
KEY12 21
KEY13 22
KEY14 23
GND 24
CN5 NC
GND 1
GND 2
GND 3
GND 4
FVDSV 5
TEST 6
E
D
C
B

SCHEMATIC DIAGRAM OF MAIN BOARD (DRIVE/MOTHER SECTION)


CN6 NC
1 SDATA
2 SCLK
3 LD
4 STB
5 3R5V
6 WHD
7 VD
8 B-Y
9 GND
10 R-Y
11 GND
12 Y
13 GND
14 ZOOMOUT
15 FOCUSOUT
16 SCFlne
17 HPhase
18 PAL-FSC
19 INT-FSC
20 GND
21 SCB
22 GND
23 SCR
24 BFP
CN8 NC
1 CP2
2 BFP
3 GND
4 SCR
5 GND
6 SCB
7 INT-FSC
8 PAL-FSC
9 HPhase
10 SCFlne
11 VD
12 WHD
13 M3
14 M2
15 M1
16 GND
17 SCP1
18 SCP0
19 GND
20 FVD5V
21 FVD
22 FWHD
23 RBLK
24 FBLK
CN7 NC
1 CP2
2 CBLK
3 SYNK
4 BR6V
5 5V
6 GND
7 GND
8 YOUT
9 GND
IC6
TIMING GENERATOR
CLP1
BFG
XDL2
XDL1
XSH2/SHD
XSH1/SHP
XSP2
XSP1
VSS
XSHD
XSHP
CLD
TEST2
XV4
XSG2
XV3
XSG1
XV1
XV2
XSUB
VSS
H2
H1
VDD
VDD
LH1
RG
VEE
A2
A1
A0
A3
CLP2
CLP3
CLP4
PBLK
ID
WEN
ΦM
VDD
CL
PS
HD
VD
HTSG
TEST
XCK
CK
OSCO
OSCI
EF
ED0
ED1
ED2
SMD1
VSS
SMD2
XVCT
D1
D2
D3
D4
A5
A4
R186 103
R187 103
Q16
C72 101
C73 101
R147 333
R149 333
R146 512
R144 512
R143 472
R145 101
R142 NC
R136 NC
R133 NC
R128 105
R124 0R00
C29 103
C31 104
C35 15/16
R189 NC
R188 0R00
R190 NC
R138 *
R141 *
R137 NC
R135 0R00
R134 NC
R132 NC
R131 222
Q28
R130 560
L7 8R2
C58 10/20
IC11
R118 104
R121 104
R125 202
R122 0R00
C61 104
CF3
IN
OUT
R116 102
L8 8R2
C77 104
IC7
VCC
Y1
A2
Y3
A1
Y2
A3
GND
R222 0R00
R221 NC
C78 104
IC12
3-STATE BUS BUFFER
R219 0R00
R220 NC
R215 NC
R192 NC
R191 NC
R216 330
R214 330
R213 NC
R193 NC
R217 NC
R194 NC
R218 NC
R212 NC
R211 NC
R75
R72 0R00
R87 0R00
R69 NC
R66 NC
R65 NC
R200 0R00
R82 0R00
R83 222
C56 2R2/16
R76 102
C17 102
Q1
R78 332
R67 330
C3 10μ
C1 10
IC5
TP1
R199 NC
C74 NC
R58 101
C9 151
D14
L5
L5:PLL
R57 103
R59 103
C5 104
C7 151
D15
TD6
C13 104
C10 NC
R50 0R00
R204 0
R49 0R00
330

(MOTHER SECTION)


5 GND
6 SCB
7 INT-FSC
8 PAL-FSC
9 HPhase
10 SCPline
11 VD
12 WHD
13 M3
14 M2
15 M1
16 GND
17 SCP1
18 SCP0
19 GND
20 FVD5V
21 FVD
22 FWHD
23 RBLK
24 FBLK
CN7 NC
1 CP2
2 CBLK
3 SYNK
4 BR6V
5 5V
6 GND
7 GND
8 YOUT
9 GND
10 COUT
11 GND
12 VIDEO1
13 GND
14 VIDEO2
15 GND
16 GOUT
17 ROUT
18 BOUT
19 GND
20 SYNCOUT
21 GND
22 LEN/RLE
23 YLE/BLE
24 FI/FR
C36 NC
R150 NC
C59 NC
R152 NC
C60 NC
R153 NC
C37 NC
R154 NC
C38 NC
R151 NC
CN9 NC
1 GND
2 G/LIN
3 GND
4 GND
5 GND
6 3R5V
7 VD2
8 BR6V
9 G/LVDIN
10 5V
11 SYNC
12 CBLK
CN12 NC
1 TXD/RXD
2 RXD
3 TXD
4 GND
5 KEY14
6 KEY13
7 KEY12
8 KEY11
9 KEY0
10 GND
11 YCGND
12 YOUT1
13 YOUT2
14 COUT1
15 COUT2
16 YCGND
17 VIDEO1
18 GND
19 VIDEO2
20 V-GND
21 GOUT
22 ROUT
23 BOUT
24 RGBGND
CN13 NC
1 COM
2 SYNCOUT
3 SYNCGND
4 G/LVD
5 COM+
6 +5V
7 FOC-CONT
8 ZOM-CONT
9 IRISFOLW
10 IRISCONT
11 LENS12V
12 LENS12V
13 G/LIN
14 G/LGND
15 LENSGND
16 LENSGND
17 LENSA/M
18 EXTBR6V
19 RETGND
20 GND
21 UNRG12V
22 UNRG12V
23 UNRGGND
24 UNRGGND
CN4 NC
1 TXD/RXD
2 RXD
3 TXD
4 GND
5 CP2
6 GND
7 COM/LEV
8 NC
9 NC
10 NC
11 NC
12 NC
CN11
1 UNREGGND
2 UNREGGND
3 UNREGGND
4 UNREG12V
5 UNREG12V
6 UNREG12V
7 STAN-BY
8 COM+
9 COM
10 RETGND
11 EXTBR6V
12 LENSGND
13 LENSGND
14 LENS12V
15 LENS12V
16 LENSA/M
17 IRISCONT
18 IRISFOLW
19 ZOM-CONT
20 FOC-CONT
21 FOCUSOUT
22 ZOOMOUT
23 PWM
24 LEN/RLE
TO POWER BOARD ...CN2 VIA D-P FLEXIBLE BOARD
CN10
1 IRISRET
2 1RBV
3 YLE/BLE
4 COM/LEV
5 GND
6 GND
7 GND
8 GND
2
3
4
5
6

Note: The value indicated in schematic diagram should be read as follows:

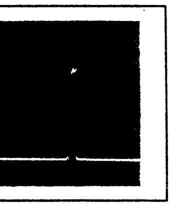
☐ ☐ ☐
- Multiplier (0 - 5)
- 2nd. Significant Digit (0 - 9)
- 1st. Siginificant Digit (1 - 9)

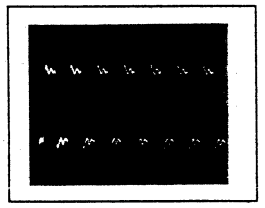
<Example>

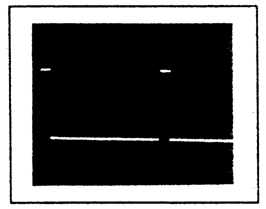
For Resistor:
330 → 33 x 10^0 = 33Ω 0R00 = 0 Ω
561 → 56 x 10^1 = 560Ω
123 → 12 x 10^3 = 12kΩ

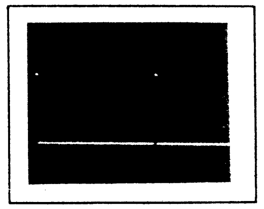
For Capacitor:
820 → 82 x 10^0 = 82pF
102 → 10 x 10^2 = 1000pF = 0.001μF
104 → 10 x 10^4 = 100000pF = 0.1μF

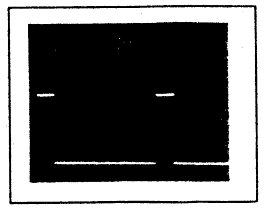
The suffix attached to capacitance indicates a type of capacitor.

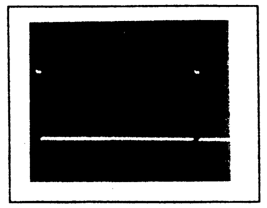

ec/DIV 2V/DIV

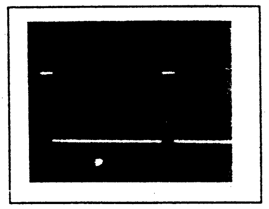

5. 50nsec/DIV 1V/DIV

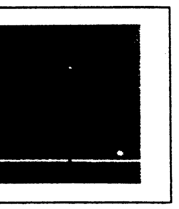

6. 10μsec/DIV 1V/DIV

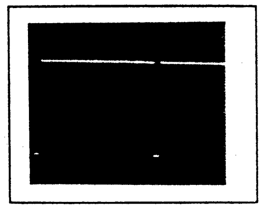

7. 10μsec/DIV 1V/DIV

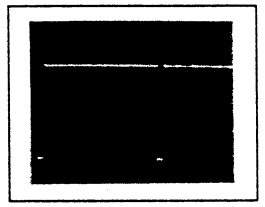

8. 10μsec/DIV 1V/DIV

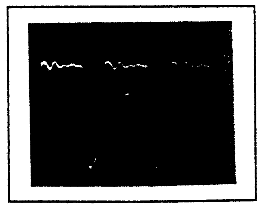

9. 2msec/DIV 1V/DIV

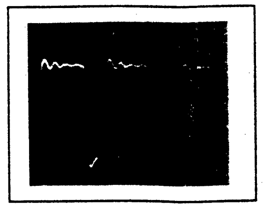

10. 10μsec/DIV 1V/DIV

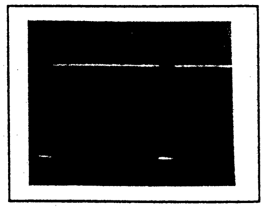

sec/DIV 1V/DIV

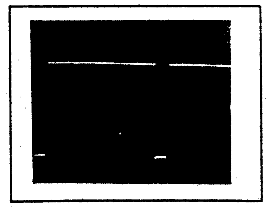

15. 10μsec/DIV 1V/DIV

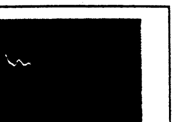

16. 10μsec/DIV 1V/DIV

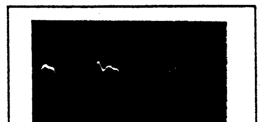

17. 20nsec/DIV 1V/DIV

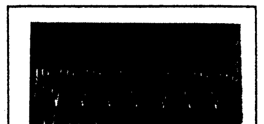

18. 20nsec/DIV 1V/DIV


19. 10μsec/DIV 1V/DIV


20. 10 μsec/DIV 1V/DIV


sec/DIV 1V/DIV


25. 20nsec/DIV 1V/DIV


26.50nsec/DIV 20mV/DIV

DRIVE/MOTHER BOARD

	IC2	IC3	IC4	IC5	IC7	IC8	IC9	IC11	IC12	IC14
Pin 1	-9.2	0.5	1.6	1.8	3.6	-0.5	24.0	2.5	0	3.7
2	-0.3	2.8	1.6	1.8	3.3	0	1.6	2.5	1.1	3.7
3	0	0	0	0	3.6	0	1.8	0	1.3	0
4	1.2	0.6	1.7	1.6	0	-10.3	25.1	2.1	1.3	4.9
5	-0.3	3.6	3.5	3.5	1.1	1.8	3.6	5.0	1.5	5.0
6	5.0				1.3	1.8	3.6		1.0	
7	1.0				1.1	0.9	22.3		1.3	
8	0.1				4.9	5.3	14.8		1.3	
9	4.8						3.6		1.5	
10	0.1						3.6		0	
11	4.6						0		1.4.	
12	4.8						3.6		1.4	
13	4.6						3.6		1.2	
14	0						6.2		1.2	
15	0								1.4	
16	15.4								1.4	
17	-								1.2	
18	-8.7								1.2	
19	-8.7								0	
20	0								4.8	

	B	C	E
Q1	(G) 1.7	(D) 3.4	(S) 2.1
3	-9.7	-9.3	0
5	0.7	0.1	0
17	15.0	15.5	15.7

	Q16
Pin 1	0
2	0.1
3	4.7
4	0

	IC1	IC6
Pin 1	1.8	4.8
2	1.8	0
3	0	4.8
4	3.6	4.8
5	3.5	4.8
6	0	4.8
7	0	4.8
8	0	0
9	0.7	4.8
10	0.6	4.8
11	0	0
12	1.7	4.8
13	0	0
14	0.3	4.8
15	0.1	1.7
16	0.1	1.6
17	0.5	1.0
18	0.1	1.6
19	1.8	1.0
20	0.4	1.7
21	0	0
22	3.5	1.3
23	3.3	4.8
24	0	4.8
25	3.5	4.8
26	3.5	2.5
27	0.1	2.3
28	0.1	0

	IC1	IC6
Pin 33	3.5	4.6
34	3.5	4.8
35	1.9	4.6
36	1.6	0
37	3.5	2.1
38	3.5	3.6
39	2.7	3.6
40	0	0
41	1.5	4.8
42	1.8	4.8
43	0	0.9
44	0	1.0
45	0.9	4.8
46	0.9	0
47	0	0
48	0	0.2
49	1.7	0.1
50	0	0.1
51	0	0.1
52	0	4.0
53	0	0
54	1.7	4.8
55	3.5	0
56	3.5	4.8
57	0	2.2
58	3.5	0
59	1.4	4.0
60	1.6	4.7

<Index>
DRIVE/MOTHER SECTION

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IC2	G4
IC3	E1
IC4	E2
IC5	E2
IC6	E6
IC7	D5
IC8	G3, H2
IC9	G2
IC11	E5
IC12	D5
IC13	E3
IC14	H3
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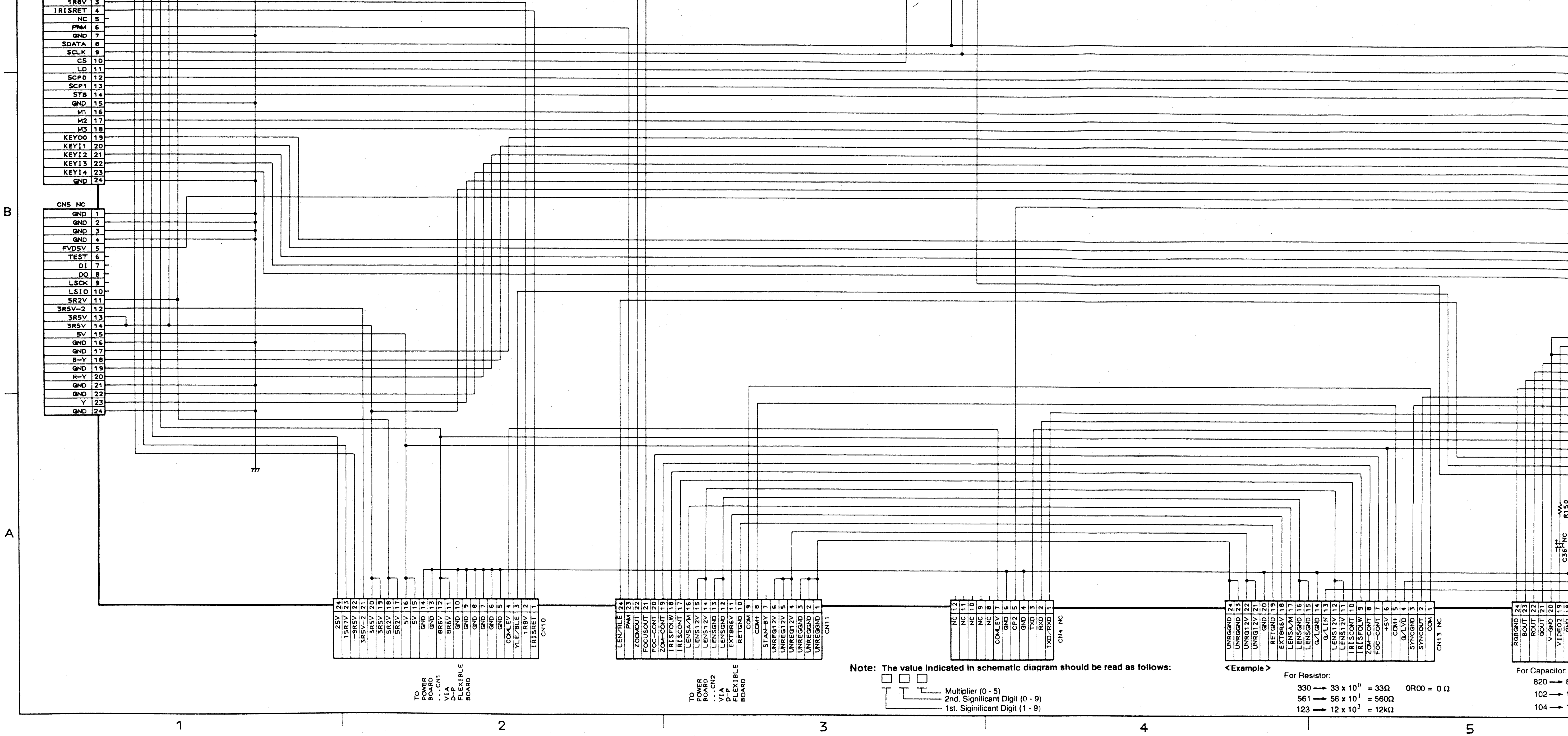
Q3	H2
Q5	G4
Q16	E6
Q17	G2
Q18	G2
Q19	G2
Q20	G3
Q21	G4
Q22	F5
Q25	F5
Q28	E5
Q29	E2


1R8V 3
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NC 5
PWM 6
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SCLK 9
CS 10
LD 11
SCP0 12
SCP1 13
STB 14
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5R2V 18
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ZOM-CONT 19
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LENS12V 11
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FOC-CONT 7
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COM+ 5
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COM 1
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BOUT 23
ROUT 22
GOUT 21
V-GND 20
VIDEO2 19
GND 18
C36 NC
R150
1
2
3
4
5

Note: The value indicated in schematic diagram should be read as follows:

☐ ☐ ☐
Multiplier (0 - 5)
2nd. Significant Digit (0 - 9)
1st. Siginificant Digit (1 - 9)

<Example>

For Resistor:
330 → 33 x 10^0 = 33Ω   0R00 = 0 Ω
561 → 56 x 10^1 = 560Ω
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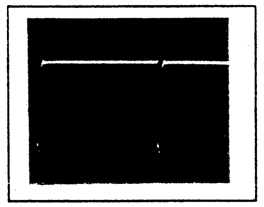
820 →
102 →
104 →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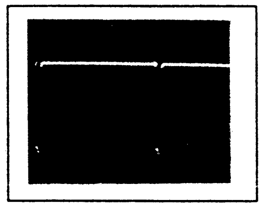
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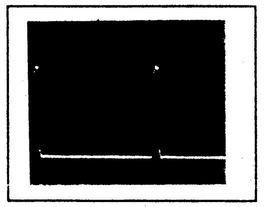
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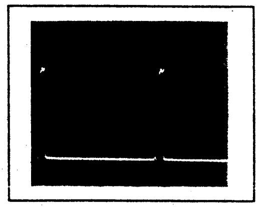
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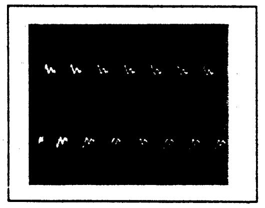
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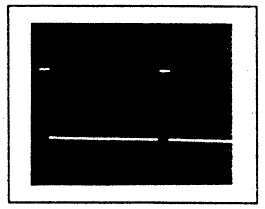
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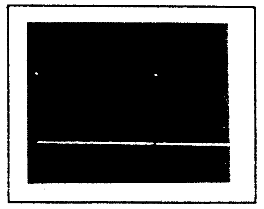
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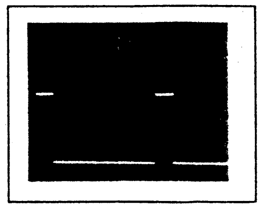
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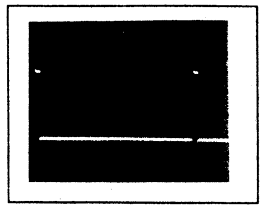
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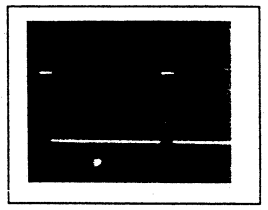
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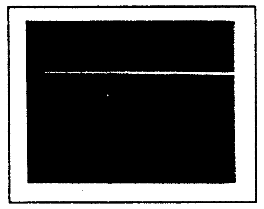
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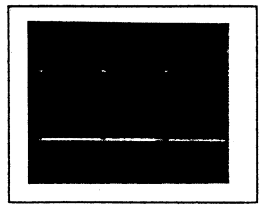
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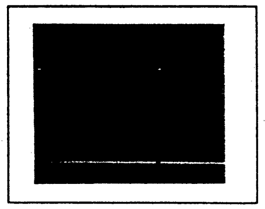
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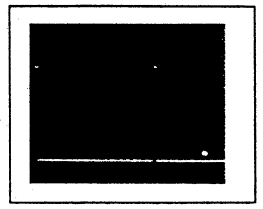
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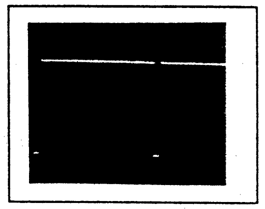
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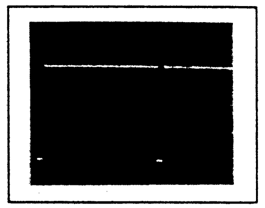
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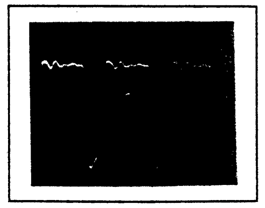
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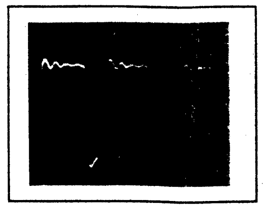
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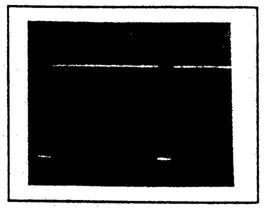
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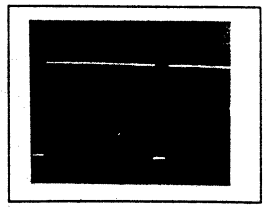
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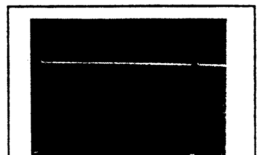
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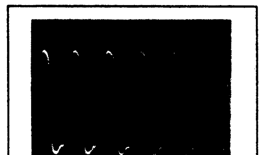
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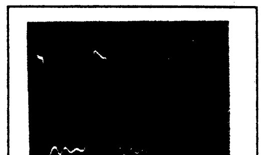
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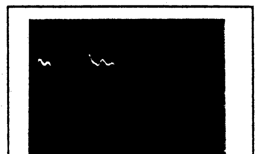
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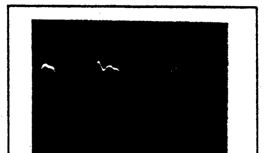
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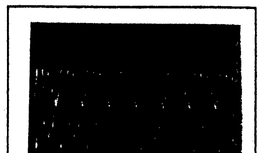
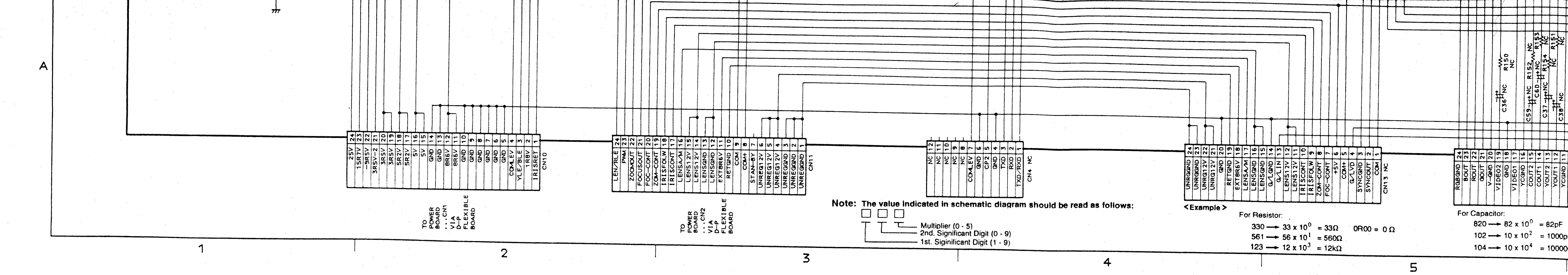

26.50nsec/DIV 20mV/DIV

DRIVE/MOTHER B

	IC2	IC3	IC4	IC5
Pin 1	-9.2	0.5	1.6	1.8
2	-0.3	2.8	1.6	1.8
3	0	0	0	0
4	1.2	0.6	1.7	1.6
5	-0.3	3.6	3.5	3.5
6	5.0			
7	1.0			
8	0.1			
9	4.8			
10	0.1			
11	4.6			
12	4.8			
13	4.6			
14	0			
15	0			
16	15.4			
17	-			
18	-8.7			
19	-8.7			
20	0			

	B	C	E
Q1	(G) 1.7	(D) 3.4	(S) 2.1
3	-9.7	-9.3	0
5	0.7	0.1	0
17	15.0	15.5	15.7
18	0	0	0


A
25V
15R7V
-9R5V
3R5V-2
3R5V
3R5V
5R2V
5R2V
5V
5V
GND
GND
8R6V
8R6V
GND
GND
GND
GND
GND
GND
COM_EV
YLE/BLE
1R8V
IRISRET
CN10
TO POWER BOARD ...CN1 VIA D-P FLEXIBLE BOARD
LEN/RLE
PWM
ZOOMOUT
FOCUSOUT
FOC-CONT
ZOM-CONT
IRISFOLW
IRISCONT
LENSA/M
LENS12V
LENS12V
LENSGND
LENSGND
EXTBR6V
RETGND
COM
COM+
STAN-BY
UNREG12V
UNREG12V
UNREG12V
UNREGGND
UNREGGND
UNREGGND
CN11
TO POWER BOARD ...CN2 VIA D-P FLEXIBLE BOARD
NC
NC
NC
NC
NC
COM_EV
GND
CP2
GND
TXD
RXD
TXD/RXD
CN4 NC
UNRGGND
UNRGGND
UNRG12V
UNRG12V
GND
RETGND
EXTBR6V
LENSA/M
LENSGND
LENSGND
G/LGND
G/LIN
LENS12V
LENS12V
IRISCONT
IRISFOLW
ZOM-CONT
FOC-CONT
+5V
COM+
G/LVD
SYNCGND
SYNCOUT
COM
CN13 NC
RGBGND
BOUT
ROUT
GOUT
V-GND
VIDEO2
GND
VIDEO1
YCGND
COUT2
COUT1
YOUT2
YOUT1
YCGND
R150 NC
C36 NC
C59 NC
R152 NC
R153 NC
C60 NC
R154 NC
C37 NC
R151 NC
C38 NC
1
2
3
4
5

Note: **The value indicated in schematic diagram should be read as follows:**

☐ ☐ ☐

- Multiplier (0 - 5)
- 2nd. Significant Digit (0 - 9)
- 1st. Siginificant Digit (1 - 9)

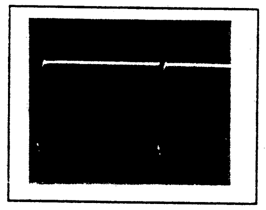
<Example>

For Resistor:

330 → 33 x 10^0 = 33Ω   0R00 = 0 Ω
561 → 56 x 10^1 = 560Ω
123 → 12 x 10^3 = 12kΩ

For Capacitor:

820 → 82 x 10^0 = 82pF
102 → 10 x 10^2 = 1000p
104 → 10 x 10^4 = 10000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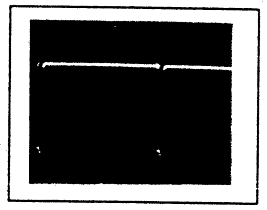
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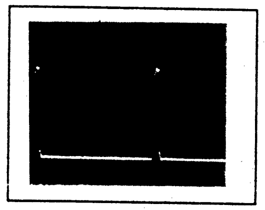
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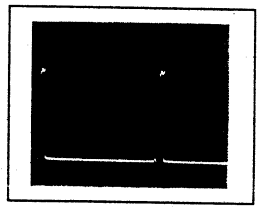
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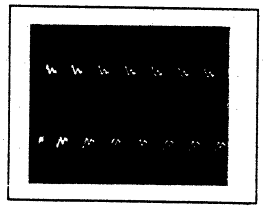
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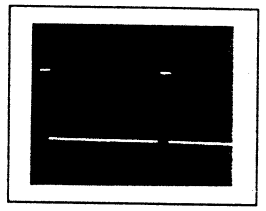
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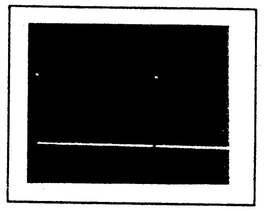
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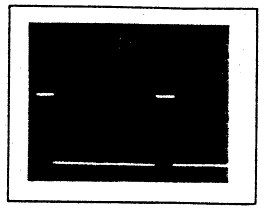
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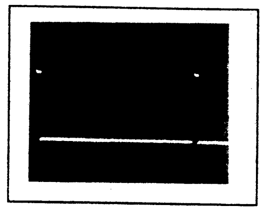
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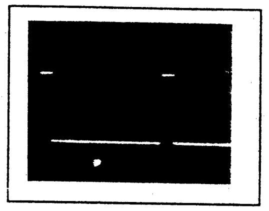
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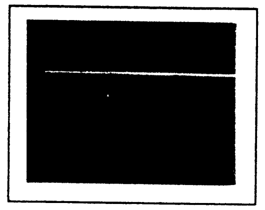
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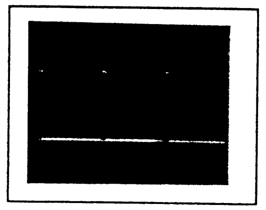
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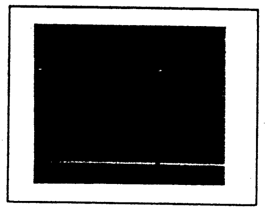
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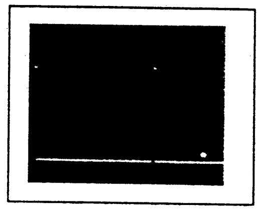
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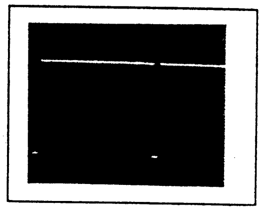
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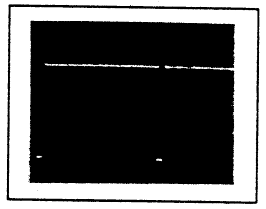
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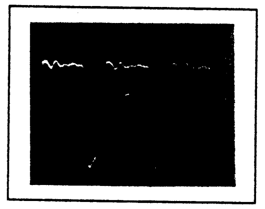
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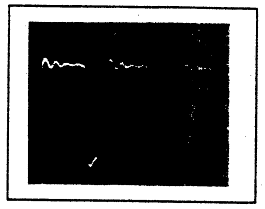
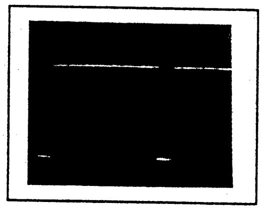
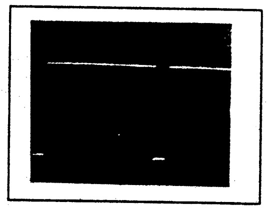
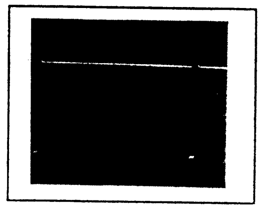
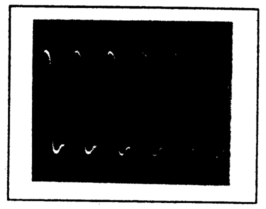
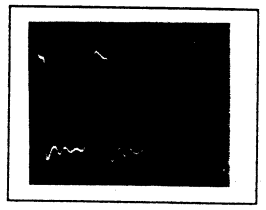

18. 20nsec/DIV 1V/DIV

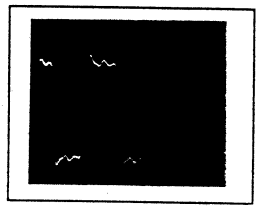

19. 10µsec/DIV 1V/DIV

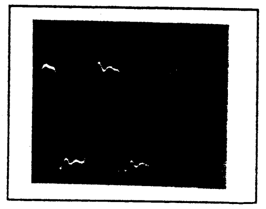

20. 10 µsec/DIV 1V/DIV

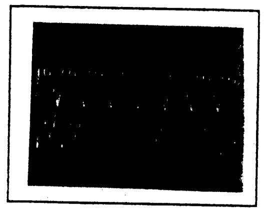

21. 2msec/DIV 1V/DIV


22. 20nsec/DIV 1V/DIV


23. 20nsec/DIV 1V/DIV


24. 20nsec/DIV 1V/DIV


25. 20nsec/DIV 1V/DIV

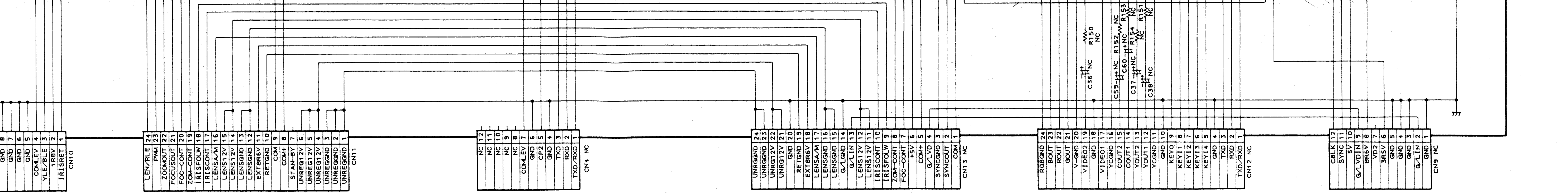

26.50nsec/DIV 20mV/DIV

DRIVE/MOTHER BOARD

	IC2	IC3	IC4	IC5	IC7	IC8	IC9
Pin 1	-9.2	0.5	1.6	1.8	3.6	-0.5	24.0
2	-0.3	2.8	1.6	1.8	3.3	0	1.6
3	0	0	0	0	3.6	0	1.8
4	1.2	0.6	1.7	1.6	0	-10.3	25.1
5	-0.3	3.6	3.5	3.5	1.1	1.8	3.6
6	5.0				1.3	1.8	3.6
7	1.0				1.1	0.9	22.3
8	0.1				4.9	5.3	14.8
9	4.8						3.6
10	0.1						3.6
11	4.6						0
12	4.8						3.6
13	4.6						3.6
14	0						6.2
15	0						
16	15.4						
17	-						
18	-8.7						
19	-8.7						
20	0						

	B	C	E
Q1	(G) 1.7	(D) 3.4	(S) 2.1
3	-9.7	-9.3	0
5	0.7	0.1	0
17	15.0	15.5	15.7
18	0	0	0
19	7.9	8.5	8.6
20	4.6	5.0	5.3
21	0	0.1	0
22	1.4	0	2.1
25	1.5	0	2.2
28	1.4	0	2.1
29	5.0	0	5.0
30	0	5.0	0
31	-0.5	-9.7	0
36	0.9	4.6	0.3

	Q1
Pin 1	0
2	0.
3	4.
4	0
5	0
6	4.


GND
GND
GND
GND
COM_LEV
YLE/BLE
1R8V
IRISRET
CN10
LEN/RLE
PWM
ZOOMOUT
FOCUSOUT
FOC-CONT
ZOM-CONT
IRISFOLW
IRISCONT
LENSA/M
LENS12V
LENS12V
LENSGND
LENSGND
EXT8R6V
RETGND
COM
COM+
STAN-BY
UNREG12V
UNREG12V
UNREG12V
UNREGGND
UNREGGND
UNREGGND
CN11
TO POWER BOARD ...CN2 VIA D-P FLEXIBLE BOARD
NC
NC
NC
NC
NC
COM_LEV
GND
CP2
GND
TXD
RXD
TXD/RXD
CN4 NC
UNRGGND
UNRGGND
UNRG12V
UNRG12V
GND
RETGND
EXT8R6V
LENSA/M
LENSGND
LENSGND
G/LGND
G/LIN
LENS12V
LENS12V
IRISCONT
IRISFOLW
ZOM-CONT
FOC-CONT
+5V
COM+
G/LVD
SYNCGND
SYNCOUT
COM
CN13 NC
R150 NC
C36 NC
C59 NC
R152 NC
C60 NC
R153 NC
R154 NC
C37 NC
R151 NC
C38 NC
RGBGND
BOUT
ROUT
GOUT
V-GND
VIDEO2
GND
VIDEO1
YCGND
COUT2
COUT1
YOUT2
YOUT1
YCGND
GND
KEYO
KEY11
KEY12
KEY13
KEY14
GND
TXD
RXD
TXD/RXD
CN12 NC
CBLK
SYNC
5V
G/LVDIN
BR6V
VD2
3R5V
GND
GND
GND
G/LIN
GND
CN9 NC

Note: The value Indicated in schematic diagram should be read as follows:

☐ ☐ ☐
- Multiplier (0 - 5)
- 2nd. Significant Digit (0 - 9)
- 1st. Siginificant Digit (1 - 9)

<Example>

For Resistor:

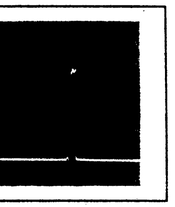
330 → 33 x 10^0 = 33Ω   0R00 = 0 Ω
561 → 56 x 10^1 = 560Ω
123 → 12 x 10^3 = 12kΩ

For Capacitor:

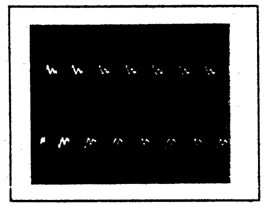
820 → 82 x 10^0 = 82pF
102 → 10 x 10^2 = 1000pF = 0.001μF
104 → 10 x 10^4 = 100000pF = 0.1μF

The suffix attached to capacitance indicates a type of capacitor.

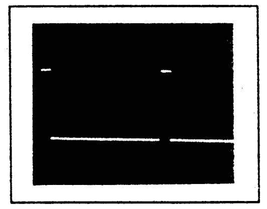
ec/DIV 2V/DIV



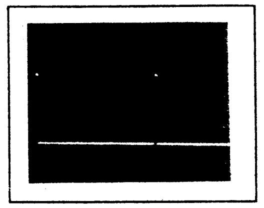
5. 50nsec/DIV 1V/DIV



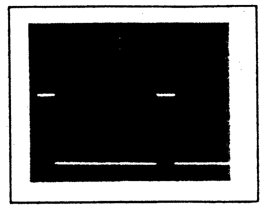
6. 10μsec/DIV 1V/DIV



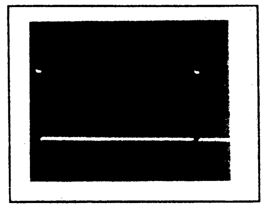
7. 10μsec/DIV 1V/DIV



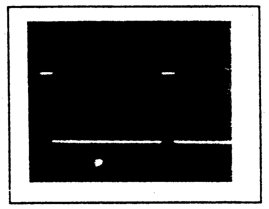
8. 10μsec/DIV 1V/DIV



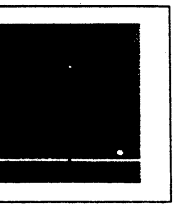
9. 2msec/DIV 1V/DIV



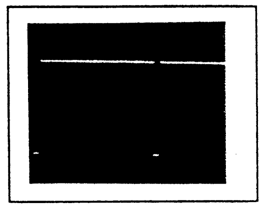
10. 10μsec/DIV 1V/DIV



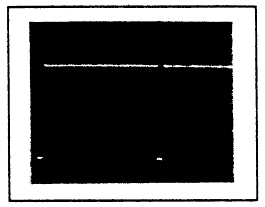
sec/DIV 1V/DIV



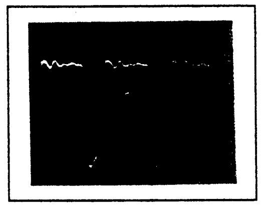
15. 10μsec/DIV 1V/DIV



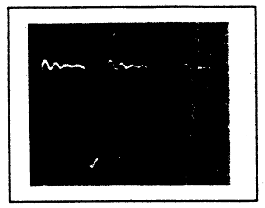
16. 10μsec/DIV 1V/DIV



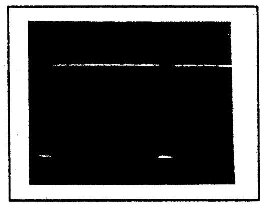
17. 20nsec/DIV 1V/DIV



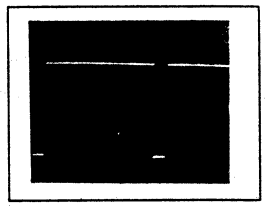
18. 20nsec/DIV 1V/DIV



19. 10μsec/DIV 1V/DIV

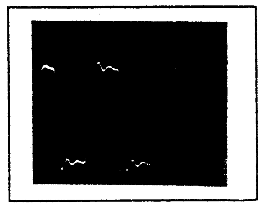


20. 10 μsec/DIV 1V/DIV

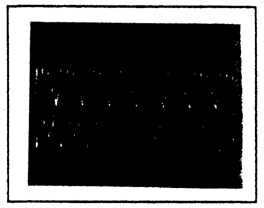


sec/DIV 1V/DIV

25. 20nsec/DIV 1V/DIV



26.50nsec/DIV 20mV/DIV



DRIVE/MOTHER BOARD

	IC2	IC3	IC4	IC5	IC7	IC8	IC9	IC11	IC12	IC14
Pin 1	-9.2	0.5	1.6	1.8	3.6	-0.5	24.0	2.5	0	3.7
2	-0.3	2.8	1.6	1.8	3.3	0	1.6	2.5	1.1	3.7
3	0	0	0	0	3.6	0	1.8	0	1.3	0
4	1.2	0.6	1.7	1.6	0	-10.3	25.1	2.1	1.3	4.9
5	-0.3	3.6	3.5	3.5	1.1	1.8	3.6	5.0	1.5	5.0
6	5.0				1.3	1.8	3.6		1.0	
7	1.0				1.1	0.9	22.3		1.3	
8	0.1				4.9	5.3	14.8		1.3	
9	4.8						3.6		1.5	
10	0.1						3.6		0	
11	4.6						0		1.4.	
12	4.8						3.6		1.4	
13	4.6						3.6		1.2	
14	0						6.2		1.2	
15	0								1.4	
16	15.4								1.4	
17	-								1.2	
18	-8.7								1.2	
19	-8.7								0	
20	0								4.8	

	IC1	IC6
Pin 1	1.8	4.8
2	1.8	0
3	0	4.8
4	3.6	4.8
5	3.5	4.8
6	0	4.8
7	0	4.8
8	0	0
9	0.7	4.8
10	0.6	4.8
11	0	0
12	1.7	4.8
13	0	0
14	0.3	4.8
15	0.1	1.7
16	0.1	1.6
17	0.5	1.0
18	0.1	1.6
19	1.8	1.0
20	0.4	1.7
21	0	0
22	3.5	1.3
23	3.3	4.8
24	0	4.8
25	3.5	4.8
26	3.5	2.5
27	0.1	2.3
28	0.1	0
29	3.4	4.8
30	0.1	0.1
31	1.0	0.1
32	3.5	4.8

	IC1	IC6
Pin 33	3.5	4.6
34	3.5	4.8
35	1.9	4.6
36	1.6	0
37	3.5	2.1
38	3.5	3.6
39	2.7	3.6
40	0	0
41	1.5	4.8
42	1.8	4.8
43	0	0.9
44	0	1.0
45	0.9	4.8
46	0.9	0
47	0	0
48	0	0.2
49	1.7	0.1
50	0	0.1
51	0	0.1
52	0	4.0
53	0	0
54	1.7	4.8
55	3.5	0
56	3.5	4.8
57	0	2.2
58	3.5	0
59	1.4	4.0
60	1.6	4.7
61	0	4.8
62	0	0
63	0	2.5
64	1.4	2.1

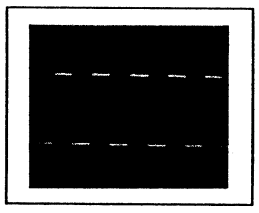
	B	C	E
Q1	(G) 1.7	(D) 3.4	(S) 2.1
3	-9.7	-9.3	0
5	0.7	0.1	0
17	15.0	15.5	15.7
18	0	0	0
19	7.9	8.5	8.6
20	4.6	5.0	5.3
21	0	0.1	0
22	1.4	0	2.1
25	1.5	0	2.2
28	1.4	0	2.1
29	5.0	0	5.0
30	0	5.0	0
31	-0.5	-9.7	0
36	0.9	4.6	0.3

	Q16
Pin 1	0
2	0.1
3	4.7
4	0
5	0
6	4.2

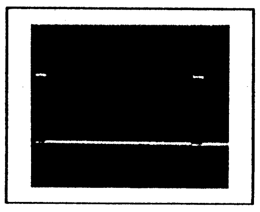
<Index>
DRIVE/MOTHER SECTION

IC1	F3
IC2	G4
IC3	E1
IC4	E2
IC5	E2
IC6	E6
IC7	D5
IC8	G3, H2
IC9	G2
IC11	E5
IC12	D5
IC13	E3
IC14	H3
Q1	E2
Q3	H2
Q5	G4
Q16	E6
Q17	G2
Q18	G2
Q19	G2
Q20	G3
Q21	G4
Q22	F5
Q25	F5
Q28	E5
Q29	E2
Q30	E2
Q31	H2
Q36	G3
D3	G3
D4	G4
D5	G4
D15	E2
D16	E2

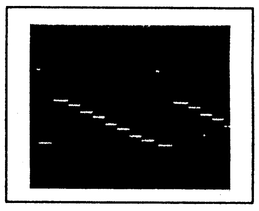
1. 1μsec/DIV 1V/DIV



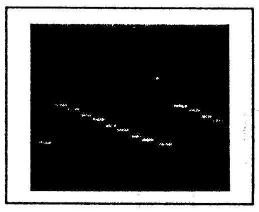
2. 2msec/DIV 1V/DIV



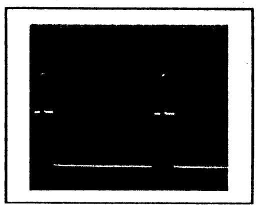
3. 10μsec/DIV 0.2V/DIV



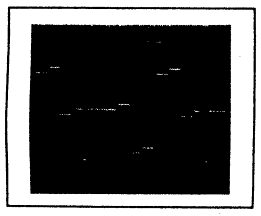
4. 10μsec/DIV 50mV/DIV



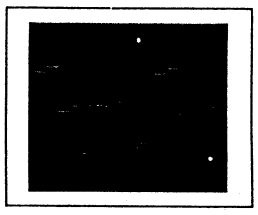
5. 10μsec/DIV 1V/DIV



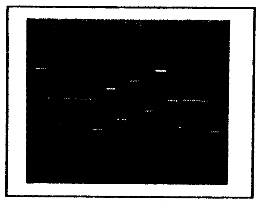
6. 10μsec/DIV 0.1V/DIV



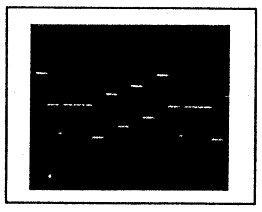
7. 10μsec/DIV 0.1V/DIV



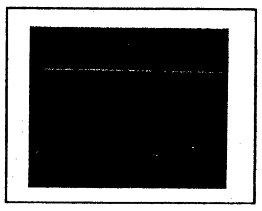
8. 10μsec/DIV 0.1V/DIV



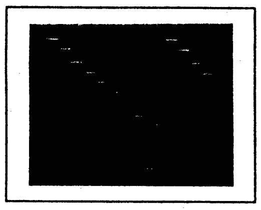
9. 10μsec/DIV 0.1V/DIV



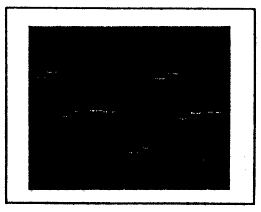
10. 10μsec/DIV 0.1V/DIV



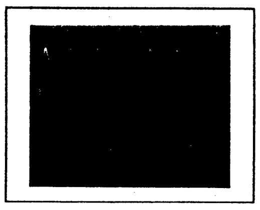
11. 10μsec/DIV 0.2V/DIV



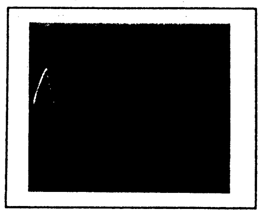
12. 10μsec/DIV 0.1V/DIV



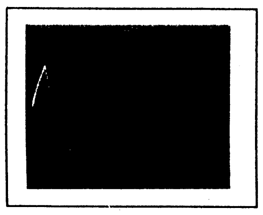
13. 0.2μsec/DIV 50mV/DIV



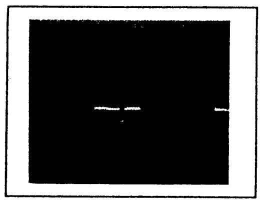
14. 0.1μsec/DIV 0.1V/DIV



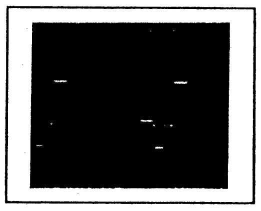
15. 10μsec/DIV 2V/DIV



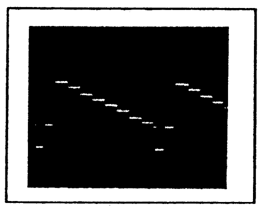
16. 10μsec/DIV 0.5V/DIV



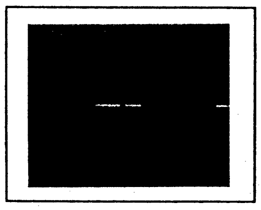
17. 10μsec/DIV 0.5V/DIV



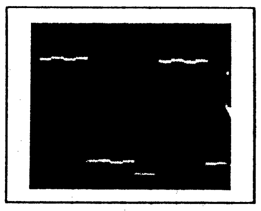
18. 10μsec/DIV 0.5V/DIV



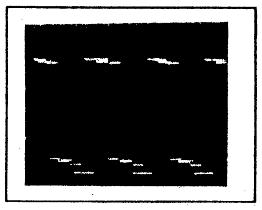
19. 10μsec/DIV 0.2V/DIV



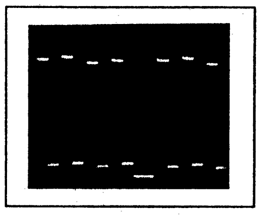
20. 10μsec/DIV 0.2V/DIV



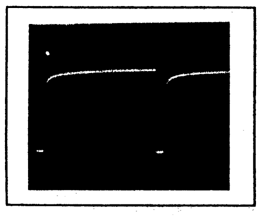
21. 10 μsec/DIV 0.2V/DIV



22. 10 μsec/DIV 0.2V/DIV



23. 10 μsec/DIV 0.2V/DIV



ENCODER BOARD

	IC1	IC2	IC3	IC4	IC5	IC8	IC9	IC10	IC11	IC12	IC13
Pin 1	2.9	2.7	0	2.5	2.5	0.4	1.3	1.3	3.8	4.2	0
2	2.5	2.5	2.5	2.5	1.8	3.5	0.5	0.1	0	0	4.9
3	2.5	2.8	2.0	2.5	2.1	0	0	0	0	0	5.0
4	2.7	2.8	3.6	0	2.8	0.1	3.0	3.5	0	0	0
5	0.5	2.5	2.2	-	1.2	3.6	3.6	3.6	8.5	8.5	0.1
6	0	0	1.8	-	4.4	3.6			3.9	4.2	0.3
7	0	0	2.3	3.8	1.1	0.6			0	4.2	0
8	-	0	0	5.0	3.5	1.7			8.5	8.5	0
9	-	3.8	1.8		1.2	1.7					0
10	2.5	3.8	5.0		3.4	0					5.0
11	2.9	3.8	5.0		1.3	0					5.0
12	0.5	2.5	1.5		4.5	0.1					0
13	0.5	2.9	2.0		1.3	0					0
14	8.5	2.8	1.4		0	0					0.8
15		2.7	0			0					0
16		5.0	3.5			0					3.5
17			0.1			0					4.6
18			2.2			3.5					0
19			1.5			3.0					0.6
20			0			1.3					0

	IC6
Pin 1	0.1
2	1.7
3	2.4
4	1.8
5	4.9
6	3.1
7	4.8
8	0.8
9	0
10	1.8
11	1.9
12	0
13	1.8
14	0
15	1.8
16	1.8
17	4.9
18	2.4
19	1.8
20	1.8

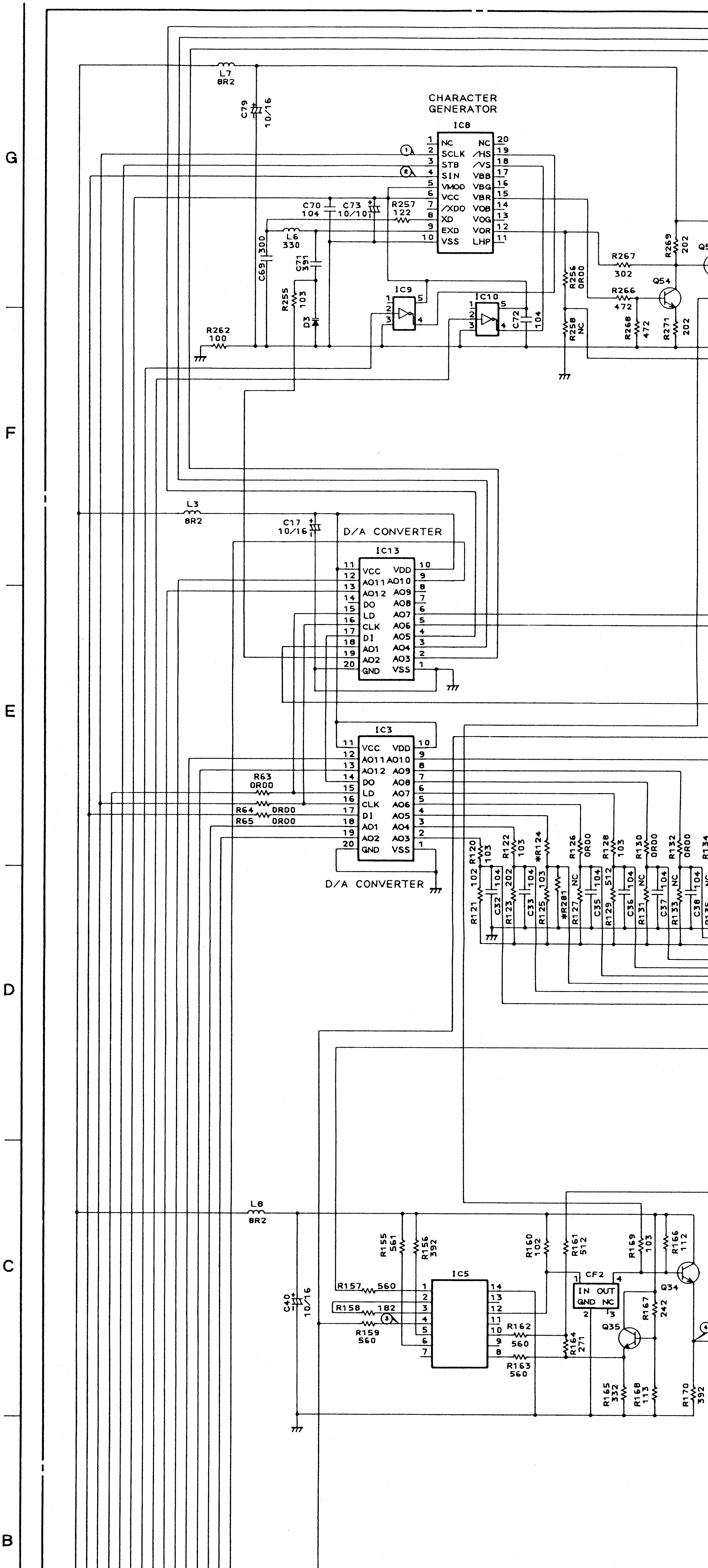
	IC6
Pin 21	1.8
22	2.6
23	0
24	0
25	1.3
26	4.4
27	1.8
28	2.6
29	1.0
30	2.0
31	1.8
32	1.8
33	0
34	1.7
35	3.0
36	2.3
37	3.0
38	1.8
39	1.8
40	1.8

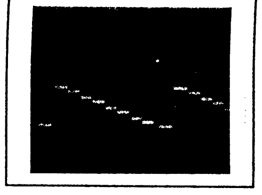
	IC6
Pin 41	3.0
42	2.2
43	0
44	0.4
45	2.4
46	0.3
47	2.5
48	1.3

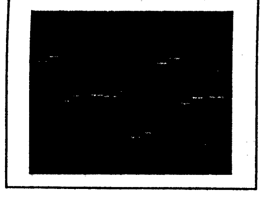
	Q4	Q8	Q12	Q15	Q19	Q22	Q26	Q36	Q41	Q46	Q51
1	2.1	2.6	1.6	2.5	1.6	2.7	0	2.5	2.6	2.7	1.9
2	2.1	2.6	1.6	2.5	0.8	2.7	0	2.5	2.6	2.7	2.7
3	2.8	3.4	2.3	3.2	2.3	3.4	0.1	3.1	3.2	3.3	2.1
4	5.7	4.9	4.5	4.7	4.7	5.0	8.0	4.4	4.9	4.7	1.3
5	2.8	3.4	2.3	3.3	2.3	3.4	0.2	3.2	3.3	3.3	1.2
6	5.0	5.0	5.0	5.0	5.0	5.0	3.8	5.0	5.0	5.0	0

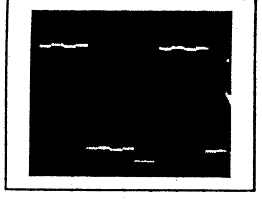
	B	C	E
Q54	0	3.0	0
55	3.0	5.0	2.3
57	7.7	7.7	8.0
58	0	8.0	0
56	0	8.5	0
49	1.5	3.5	0.9
45	4.0	5.0	3.3
47	4.7	8.4	4.2

ENCODER SECTION

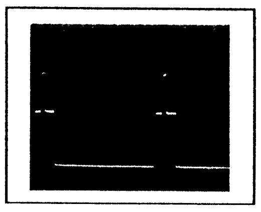

G
F
E
D
C
B
L7
8R2
C79
10/16
CHARACTER
GENERATOR
IC8
NC
SCLK
STB
SIN
VMOD
VCC
/XDO
XD
EXD
VSS
NC
/HS
/VS
VBB
VBG
VBR
VOB
VOG
VOR
LHP
C70
104
C73
10/10
R257
122
L6
330
C69
300
C71
391
R255
103
D3
IC9
IC10
C72
104
R256
0R00
R258
NC
R262
100
R267
302
R269
202
R266
472
Q54
R268
472
R271
202
L3
8R2
C17
10/16
D/A CONVERTER
IC13
VCC
AO11
AO12
DO
LD
CLK
DI
AO1
AO2
GND
VDD
AO10
AO9
AO8
AO7
AO6
AO5
AO4
AO3
VSS
IC3
R63
0R00
R64
0R00
R65
0R00
D/A CONVERTER
R120
103
R121
102
C32
104
R122
103
R123
202
C33
104
*R124
R125
103
*R281
R126
0R00
R127
NC
C35
104
R128
103
R129
512
C36
104
R130
0R00
R131
NC
C37
104
R132
0R00
R133
NC
C38
104
R134
L8
8R2
C40
10/16
R155
561
R156
392
R157
560
R158
182
R159
560
IC5
R160
102
R161
512
R162
560
R163
560
R164
271
CF2
IN OUT
GND NC
Q35
Q34
R165
332
R168
113
R167
242
R169
103
R166
112
R170
392



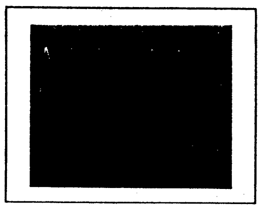




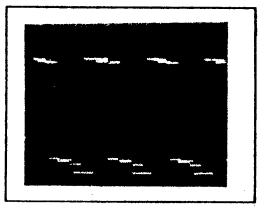
5. 10µsec/DIV 1V/DIV



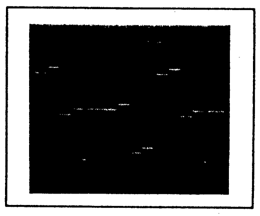
13. 0.2µsec/DIV 50mV/DIV



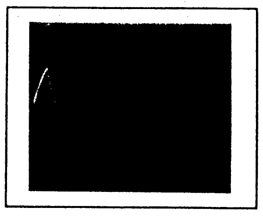
21. 10 µsec/DIV 0.2V/DIV



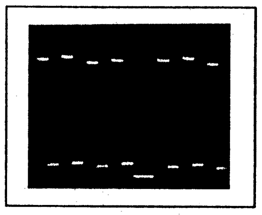
6. 10µsec/DIV 0.1V/DIV



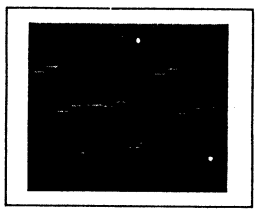
14. 0.1µsec/DIV 0.1V/DIV



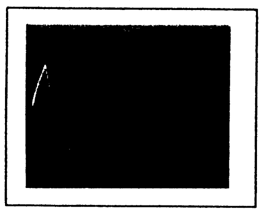
22. 10 µsec/DIV 0.2V/DIV



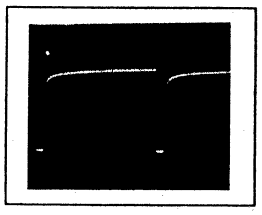
7. 10µsec/DIV 0.1V/DIV



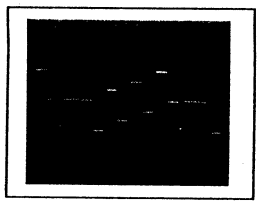
15. 10µsec/DIV 2V/DIV



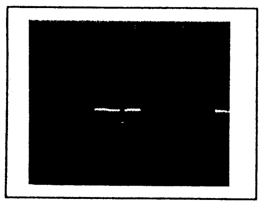
23. 10 µsec/DIV 0.2V/DIV



8. 10µsec/DIV 0.1V/DIV



16. 10µsec/DIV 0.5V/DIV



ENCODER BOARD

	IC1	IC2	IC3	IC4	IC5	IC8	IC9	IC10	IC11	IC12	IC13
Pin 1	2.9	2.7	0	2.5	2.5	0.4	1.3	1.3	3.8	4.2	0
2	2.5	2.5	2.5	2.5	1.8	3.5	0.5	0.1	0	0	4.9
3	2.5	2.8	2.0	2.5	2.1	0	0	0	0	0	5.0
4	2.7	2.8	3.6	0	2.8	0.1	3.0	3.5	0	0	0
5	0.5	2.5	2.2	-	1.2	3.6	3.6	3.6	8.5	8.5	0.1
6	0	0	1.8	-	4.4	3.6			3.9	4.2	0.3
7	0	0	2.3	3.8	1.1	0.6			0	4.2	0
8	-	0	0	5.0	3.5	1.7			8.5	8.5	0
9	-	3.8	1.8		1.2	1.7					0
10	2.5	3.8	5.0		3.4	0					5.0
11	2.9	3.8	5.0		1.3	0					5.0
12	0.5	2.5	1.5		4.5	0.1					0
13	0.5	2.9	2.0		1.3	0					0
14	8.5	2.8	1.4		0	0					0.8
15		2.7	0			0					0
16		5.0	3.5			0					3.5
17			0.1			0					4.6
18			2.2			3.5					0
19			1.5			3.0					0.6
20			0			1.3					0

	IC6
Pin 1	0.1
2	1.7
3	2.4
4	1.8
5	4.9
6	3.1
7	4.8
8	0.8
9	0
10	1.8
11	1.9
12	0
13	1.8
14	0
15	1.8
16	1.8
17	4.9
18	2.4
19	1.8
20	1.8

	IC6
Pin 21	1.8
22	2.6
23	0
24	0
25	1.3
26	4.4
27	1.8
28	2.6
29	1.0
30	2.0
31	1.8
32	1.8
33	0
34	1.7
35	3.0
36	2.3
37	3.0
38	1.8
39	1.8
40	1.8

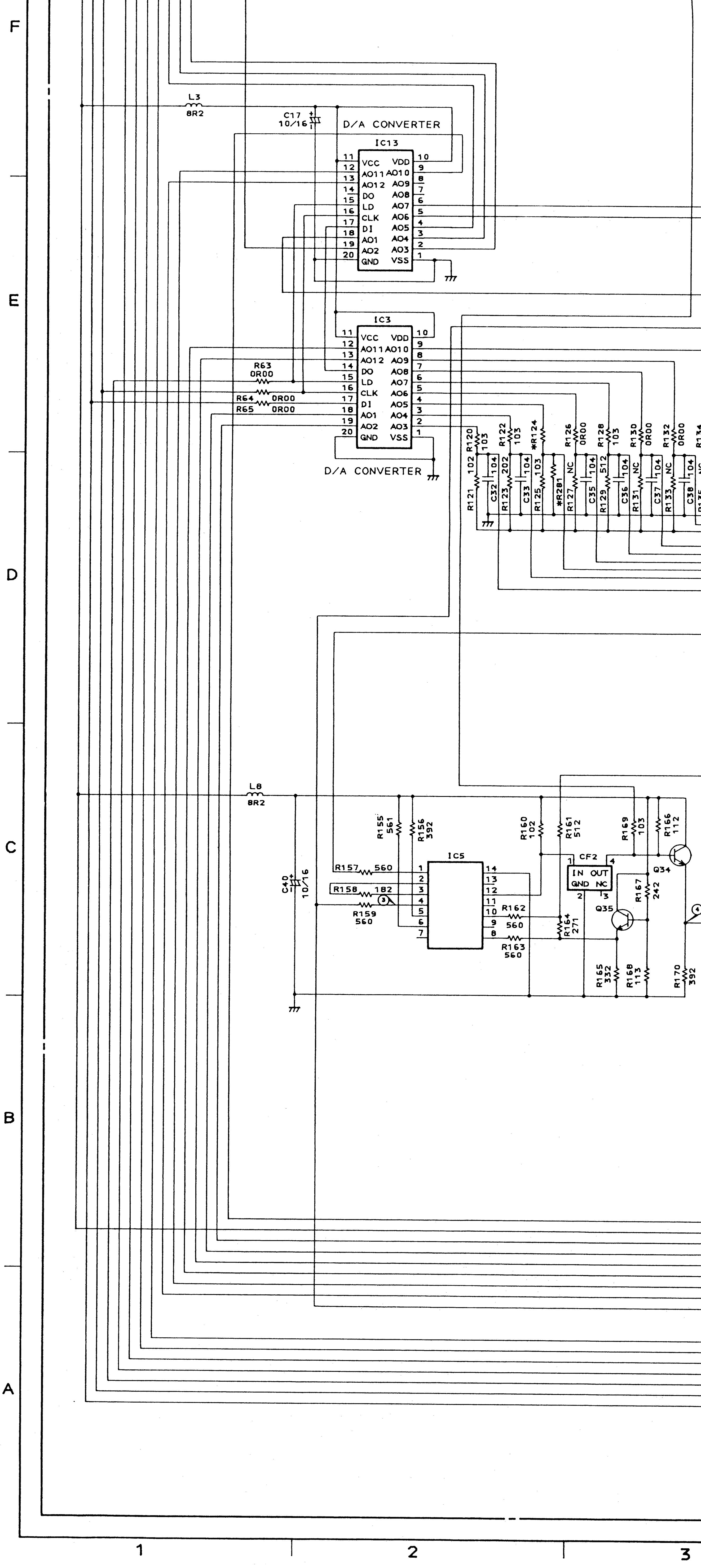
	IC6
Pin 41	3.0
42	2.2
43	0
44	0.4
45	2.4
46	0.3
47	2.5
48	1.3

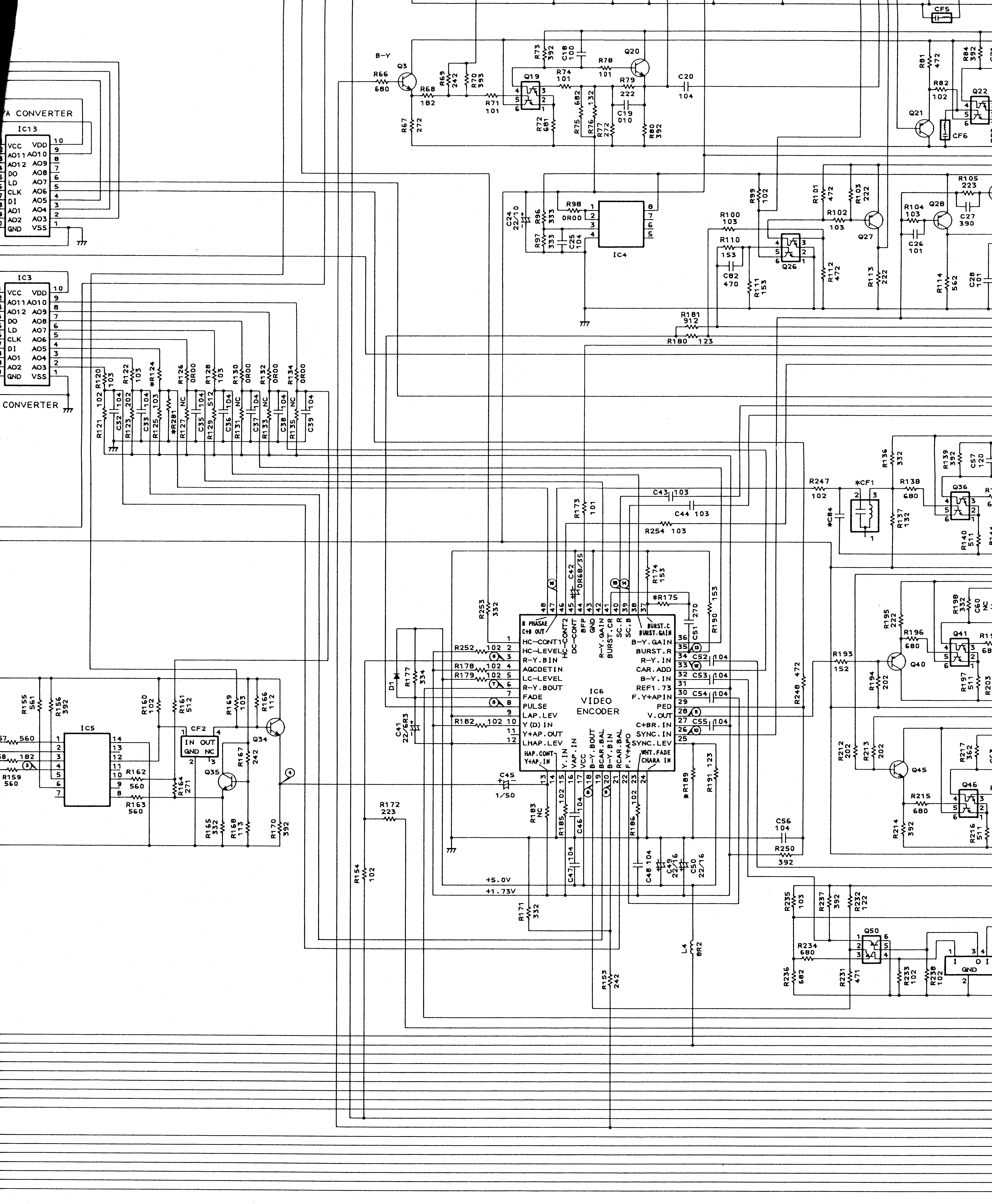
	Q4	Q8	Q12	Q15	Q19	Q22	Q26	Q36	Q41	Q46	Q51
1	2.1	2.6	1.6	2.5	1.6	2.7	0	2.5	2.6	2.7	1.9
2	2.1	2.6	1.6	2.5	0.8	2.7	0	2.5	2.6	2.7	2.7
3	2.8	3.4	2.3	3.2	2.3	3.4	0.1	3.1	3.2	3.3	2.1
4	5.7	4.9	4.5	4.7	4.7	5.0	8.0	4.4	4.9	4.7	1.3
5	2.8	3.4	2.3	3.3	2.3	3.4	0.2	3.2	3.3	3.3	1.2
6	5.0	5.0	5.0	5.0	5.0	5.0	3.8	5.0	5.0	5.0	0

	B	C	E
Q54	0	3.0	0
55	3.0	5.0	2.3
57	7.7	7.7	8.0
58	0	8.0	0
56	0	8.5	0
49	1.5	3.5	0.9
45	4.0	5.0	3.3
47	4.7	8.4	4.2
48	4.2	7.1	3.6

	B	C	E
Q1	2.8	5.0	2.2
2	3.0	5.0	2.4
3	3.1	5.0	2.1
5	5.7	8.5	5.0
6	4.8	8.5	4.0
7	2.8	0	3.4
9	4.9	8.5	4.2
10	4.2	7.9	3.5
11	1.1	3.5	0.5
13	4.5	8.5	3.8
14	2.7	0	3.3
16	4.7	8.5	4.0
17	4.0	7.9	3.3
18	1.1	3.3	0.5
20	4.7	8.5	4.0
21	2.9	0	3.5
23	5.0	8.5	4.3
24	4.3	7.8	3.7

	B	C	E
25	1.1	3.7	0.5
27	8.5	0.5	8.5
28	4.7	0.6	5.0
29	4.6	0.4	5.0
30	0	7.7	0
31	7.7	8.5	7.4
32	0.1	7.3	0
33	0.1	0	0
34	4.5	5.0	3.8
35	4.1	5.0	3.5
37	4.4	8.5	3.9
38	3.8	7.0	3.2
39	1.5	3.2	0.9
40	2.6	0	3.3
42	4.9	8.5	4.3
43	4.2	7.1	3.6
44	1.5	3.6	0.9


F
E
D
C
B
A
1
2
3
L3
8R2
C17
10/16
D/A CONVERTER
IC13
VCC VDD
AO11 AO10
AO12 AO9
DO AO8
LD AO7
CLK AO6
DI AO5
AO1 AO4
AO2 AO3
GND VSS
IC3
R63
0R00
R64 0R00
R65 0R00
D/A CONVERTER
R120 103
R121 102
C32 104
R122 103
R123 202
C33 104
*R124
R125 103
*R281
R126 0R00
R127 NC
C35 104
R128 103
R129 512
C36 104
R130 0R00
R131 NC
C37 104
R132 0R00
R133 NC
C38 104
L8
8R2
C40
10/16
R155 561
R156 392
R157 560
R158 182
R159 560
IC5
R160 102
R161 512
R162 560
R163 560
R164 271
CF2
IN OUT
GND NC
R169 103
R166 112
Q34
Q35
R167 242
R165 332
R168 113
R170 392



A CONVERTER
IC13
IC3
CONVERTER
IC4
IC5
CF2
IC6
VIDEO ENCODER
B-Y
Q3
Q19
Q20
Q21
Q22
Q26
Q27
Q28
Q34
Q35
Q36
Q40
Q41
Q45
Q46
Q50
CF5
CF6
*CF1
L4 8R2
+5.0V
+1.73V

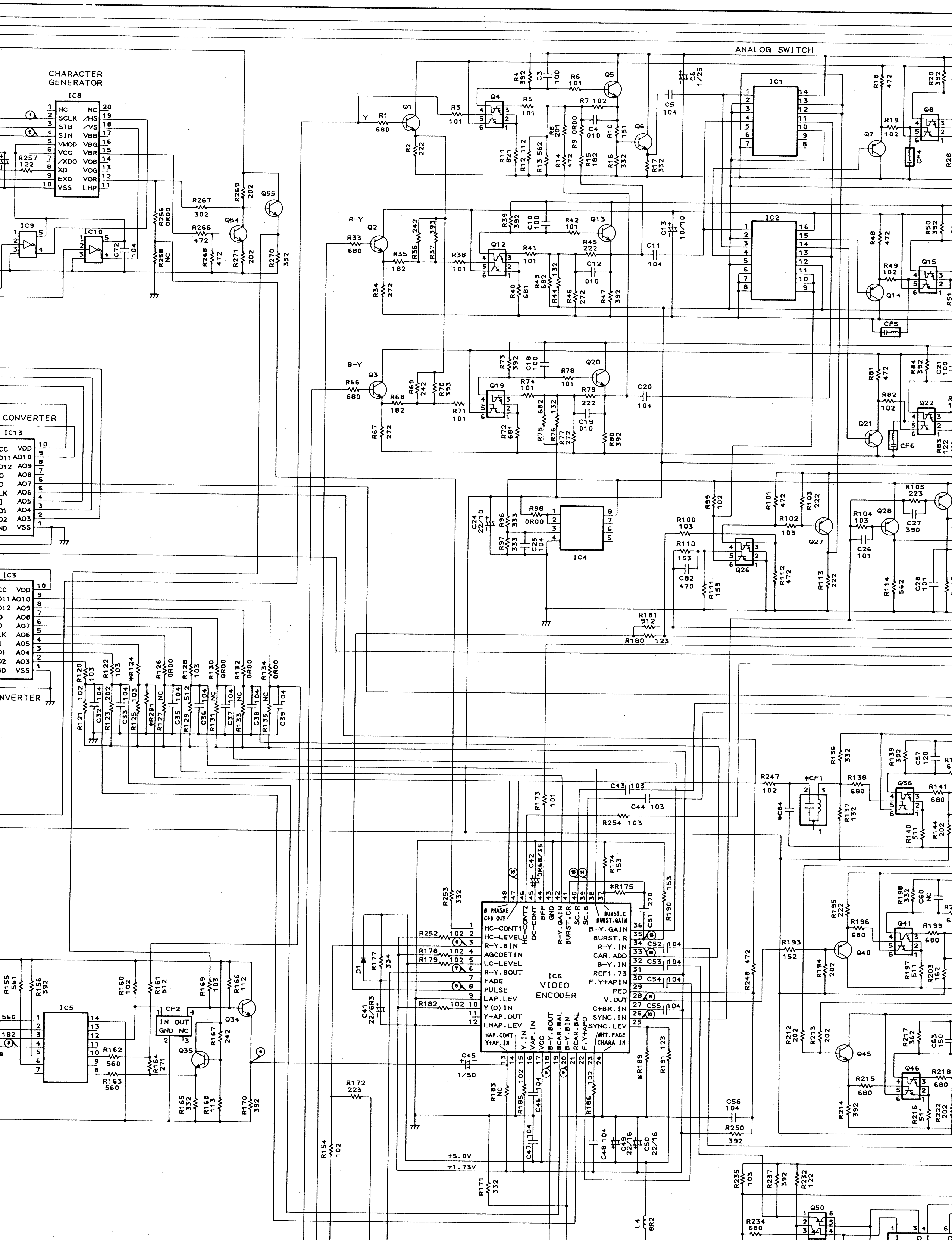
*

	CF1	D4	D5	C81	C84	R124	R175	R180	R181	R189	R191	R277	R281
NTSC	S3R6	MA372	MA372	104	180	183	391	123	912	432	123	223	752
PAL	S4R4	N.C.	N.C.	N.C.	150	753	182	203	153	562	153	N.C.	393

Note:

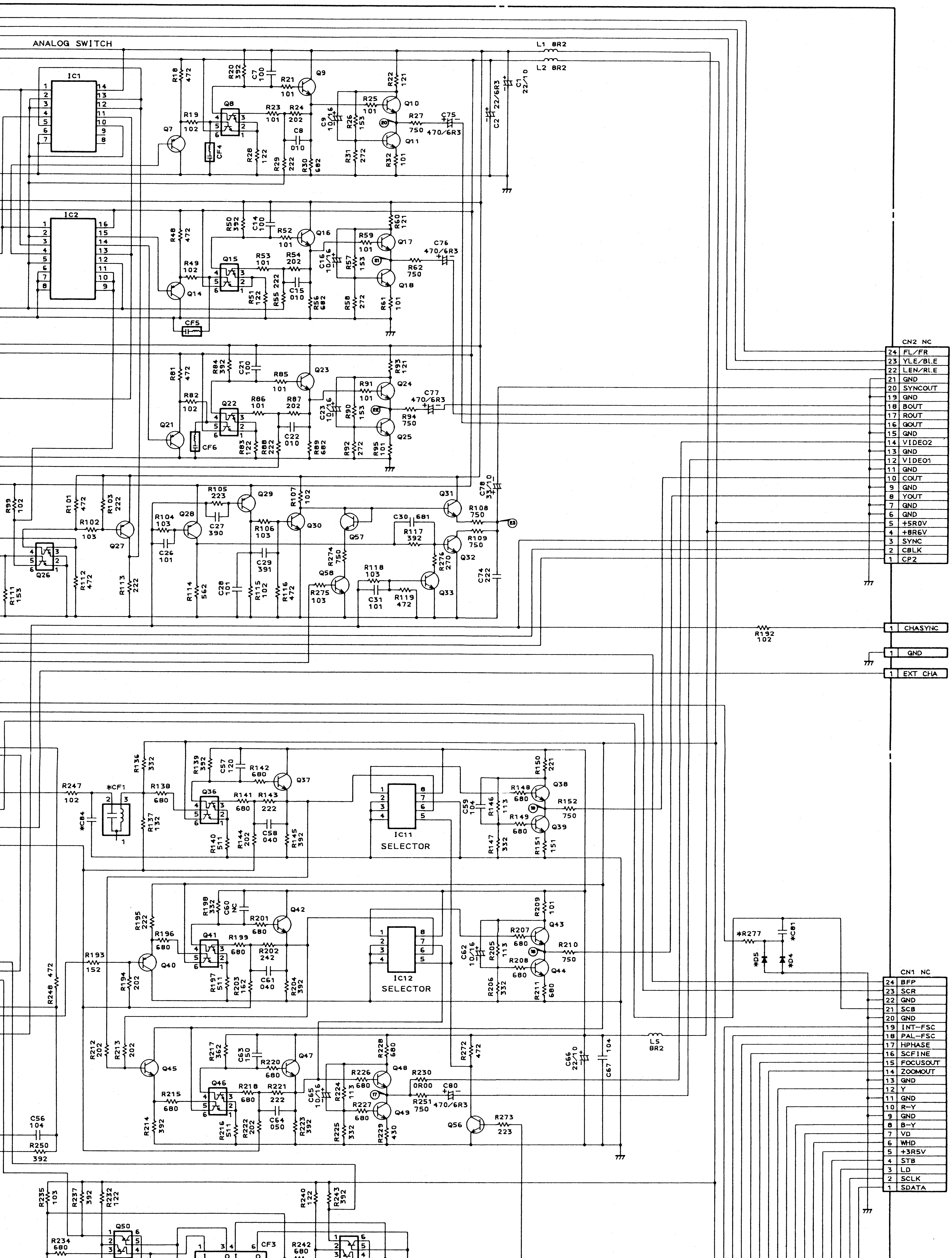
2 3 4 5 6

SCHEMATIC DIAGRAM OF MAIN BOARD (ENCODER SECTION)

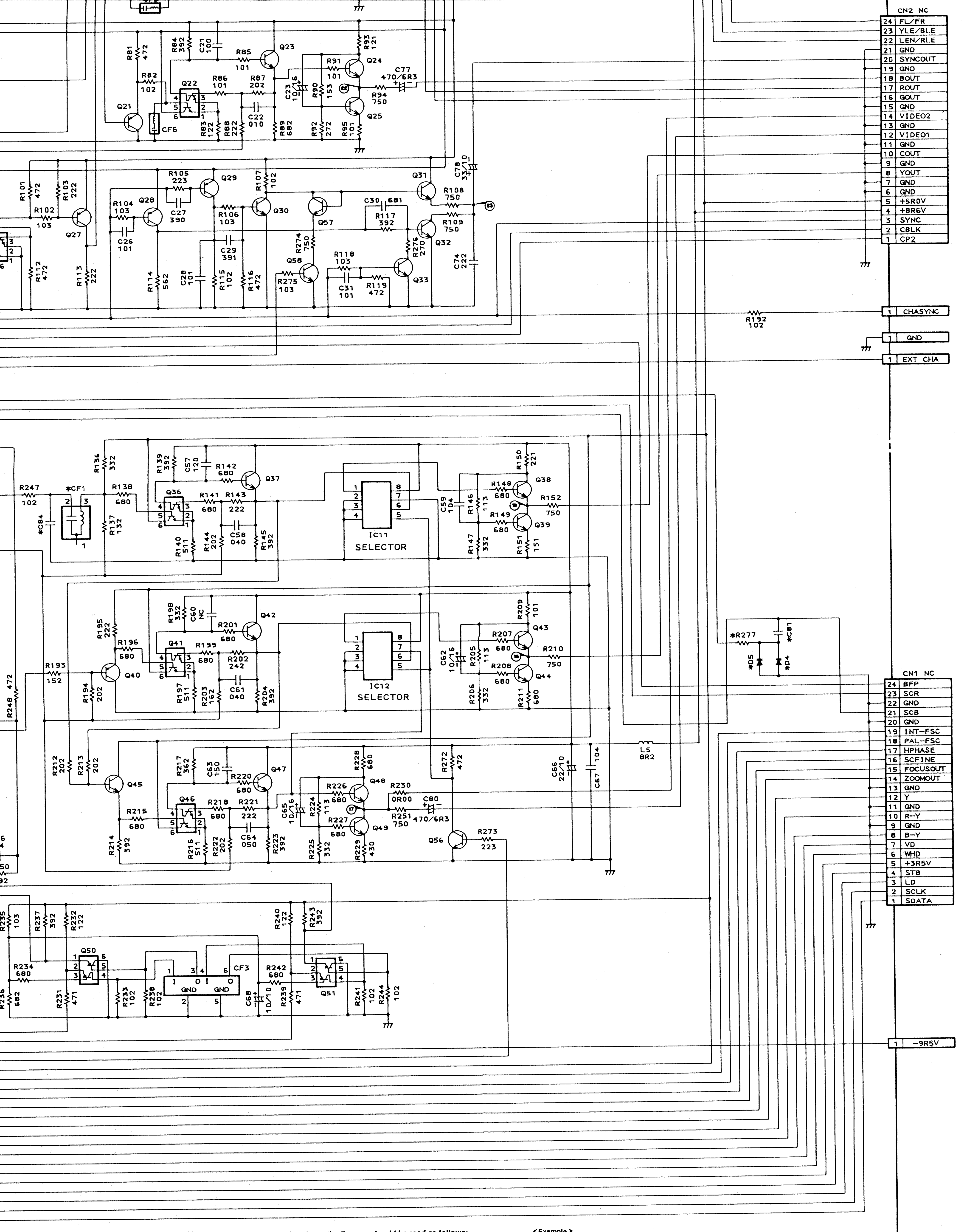


CHARACTER GENERATOR
IC8
NC
SCLK
STB
SIN
VMOD
VCC
XDO
XD
EXD
VSS
NC
HS
VS
VBB
VBG
VBR
VOB
VOG
VOR
LHP
R257 122
IC9
IC10
C72 104
R256 0R00
R258 NC
R267 302
R266 472
R268 472
R269 202
R271 202
R270 332
Q54
Q55
CONVERTER
IC13
VDD
AO10
AO9
AO8
AO7
AO6
AO5
AO4
AO3
VSS
IC3
NVERTER
R120 103
R121 102
C32 104
R122 103
R123 202
C33 104
*R124
R125 103
*R281
R126 0R00
R127 NC
C35 104
R128 103
R129 512
C36 104
R130 0R00
R131 NC
C37 104
R132 0R00
R133 NC
C38 104
R134 0R00
R135 NC
C39 104
ANALOG SWITCH
Y
R1 680
Q1
R2 222
R3 101
Q4
R4 392
C3 100
R5 101
R6 101
Q5
R7 102
C4 010
R8 201
R9 0R00
R10 151
R11 821
R12 112
R13 562
R14 472
R15 182
R16 332
Q6
R17 332
C5 104
C6 1/25
IC1
R18 472
R19 102
Q7
Q8
CF4
R20 392
R28
R-Y
R33 680
Q2
R34 272
R35 182
R36 242
R37 393
R38 101
Q12
R39 392
C10 100
R40 681
R41 101
R42 101
Q13
R43 682
R44 132
R45 222
C12 010
R46 272
R47 392
C11 104
C13 10/10
IC2
R48 472
R49 102
Q14
Q15
R50 392
R51
CF5
B-Y
R66 680
Q3
R67 272
R68 182
R69 242
R70 393
R71 101
Q19
R72 681
R73 392
C18 100
R74 101
R75 682
R76 132
R77 272
R78 101
Q20
R79 222
C19 010
R80 392
C20 104
R81 472
R82 102
Q21
Q22
CF6
R83 222
R84 392
C21 10
C24 22/10
R96 333
R97 333
C25 104
R98 0R00
IC4
R99 102
R100 103
R101 472
R102 103
R103 222
Q27
R104 103
Q28
R105 223
C26 101
C27 390
R110 153
C82 470
R111 153
Q26
R112 472
R113 222
R114 562
C28 101
R181 912
R180 123
R136 332
R139 392
C57 120
R247 102
*CF1
*C84
R137 132
R138 680
Q36
R140 511
R141 680
R144 202
C43 103
C44 103
R254 103
R173 101
R174 153
*R175
C42 0R68/35
C51 270
R190 153
R253 332
R252 102
R178 102
R179 102
R182 102
D1
R177 334
C41 22/6R3
IC6 VIDEO ENCODER
B PHASAE
C+B OUT
HC-CONT1
HC-LEVEL
R-Y.BIN
AGCDETIN
LC-LEVEL
R-Y.BOUT
FADE
PULSE
LAP.LEV
Y(D) IN
Y+AP.OUT
LHAP.LEV
HAP.CONT-Y+AP.IN
Y.IN
VAP.IN
VCC
B-Y.BOUT
B-Y.BIN
RCAR.BAL
BCAR.BAL
F.Y+APO
WHT.FADE CHARA IN
SYNC.LEV
SYNC.IN
C+BR.IN
V.OUT
PED
F.Y+APIN
REF1.73
CAR.ADD
R-Y.IN
BURST.R
B-Y.GAIN
BURST.C BURST.GAIN
SC.B
SC.R
BURST.CR
R-Y.GAIN
GND
BFP
DC-CONT
HC-CONT2
C52 104
C53 104
C54 104
C55 104
C45 1/50
R183 NC
R185 102
C46 104
C47 104
R186 102
C48 104
C49 22/16
C50 22/16
*R189
R191 123
R248 472
R193 152
Q40
R194 202
R195 222
R196 680
Q41
R197 511
R198 332
C60 NC
R199 680
R203 162
C56 104
R250 392
R172 223
R154 102
R171 332
+5.0V
+1.73V
L4 8R2
R212 202
R213 202
Q45
R214 392
R215 680
Q46
R216 511
R217 362
C63 150
R218 680
R222 202
R235 103
R237 392
R232 122
Q50
R234 680
R155 561
R156 392
IC5
R160 102
R161 512
CF2
IN
OUT
GND
NC
R169 103
R166 112
Q34
R162 560
R163 560
R164 271
Q35
R165 332
R167 242
R168 113
R170 392

(ENCODER SECTION)


ANALOG SWITCH
IC1
IC2
IC11
SELECTOR
IC12
SELECTOR
L1 8R2
L2 8R2
L5 8R2
Q7
Q8
Q9
Q10
Q11
Q14
Q15
Q16
Q17
Q18
Q21
Q22
Q23
Q24
Q25
Q26
Q27
Q28
Q29
Q30
Q31
Q32
Q33
Q36
Q37
Q38
Q39
Q40
Q41
Q42
Q43
Q44
Q45
Q46
Q47
Q48
Q49
Q50
Q56
Q57
Q58
CF3
CF4
CF5
CF6
*CF1
*C84
*R277
*C81
*D5
*D4
C1 22/10
C2 22/6R3
C75 470/6R3
C76 470/6R3
C77 470/6R3
C78 33/10
C80 470/6R3
C66 22/10
C67 104
C56 104
R250 392
R192 102
R247 102
R248 472
R193 152
CN2 NC
24 FL/FR
23 YLE/BLE
22 LEN/RLE
21 GND
20 SYNCOUT
19 GND
18 BOUT
17 ROUT
16 GOUT
15 GND
14 VIDEO2
13 GND
12 VIDEO1
11 GND
10 COUT
9 GND
8 YOUT
7 GND
6 GND
5 +5R0V
4 +8R6V
3 SYNC
2 CBLK
1 CP2
1 CHASYNC
1 GND
1 EXT CHA
CN1 NC
24 BFP
23 SCR
22 GND
21 SCB
20 GND
19 INT-FSC
18 PAL-FSC
17 HPHASE
16 SCFINE
15 FOCUSOUT
14 ZOOMOUT
13 GND
12 Y
11 GND
10 R-Y
9 GND
8 B-Y
7 VD
6 WHD
5 +3R5V
4 STB
3 LD
2 SCLK
1 SDATA

Q18
Q19
Q20
Q21
Q22
Q23
Q24


CN2 NC
24 FL/FR
23 YLE/BI.E
22 LEN/RI.E
21 GND
20 SYNCOUT
19 GND
18 BOUT
17 ROUT
16 GOUT
15 GND
14 VIDEO2
13 GND
12 VIDEO1
11 GND
10 COUT
9 GND
8 YOUT
7 GND
6 GND
5 +5R0V
4 +8R6V
3 SYNC
2 CBLK
1 CP2
1 CHASYNC
1 GND
1 EXT CHA
R192 102
CN1 NC
24 BFP
23 SCR
22 GND
21 SCB
20 GND
19 INT-FSC
18 PAL-FSC
17 HPHASE
16 SCFINE
15 FOCUSOUT
14 ZOOMOUT
13 GND
12 Y
11 GND
10 R-Y
9 GND
8 B-Y
7 VD
6 WHD
5 +3R5V
4 STB
3 LD
2 SCLK
1 SDATA
1 -9R5V
IC11 SELECTOR
IC12 SELECTOR
CF1
CF3
CF6
L5 8R2
*R277
*C81
*D5
*D4
*C84
Q21
Q22
Q23
Q24
Q25
Q27
Q28
Q29
Q30
Q31
Q32
Q33
Q36
Q37
Q38
Q39
Q40
Q41
Q42
Q43
Q44
Q45
Q46
Q47
Q48
Q49
Q50
Q51
Q56
Q57
Q58

R191	R277	R281
123	223	752
153	N.C.	393

Note: **The value indicated in schematic diagram should be read as follows:**

☐ ☐ ☐
Multiplier (0 - 5)
2nd. Significant Digit (0 - 9)
1st. Siginificant Digit (1 - 9)

<Example>

For Resistor:

330 → 33 x 10^0 = 33Ω
561 → 56 x 10^1 = 560Ω
123 → 12 x 10^3 = 12kΩ
0R00 = 0 Ω

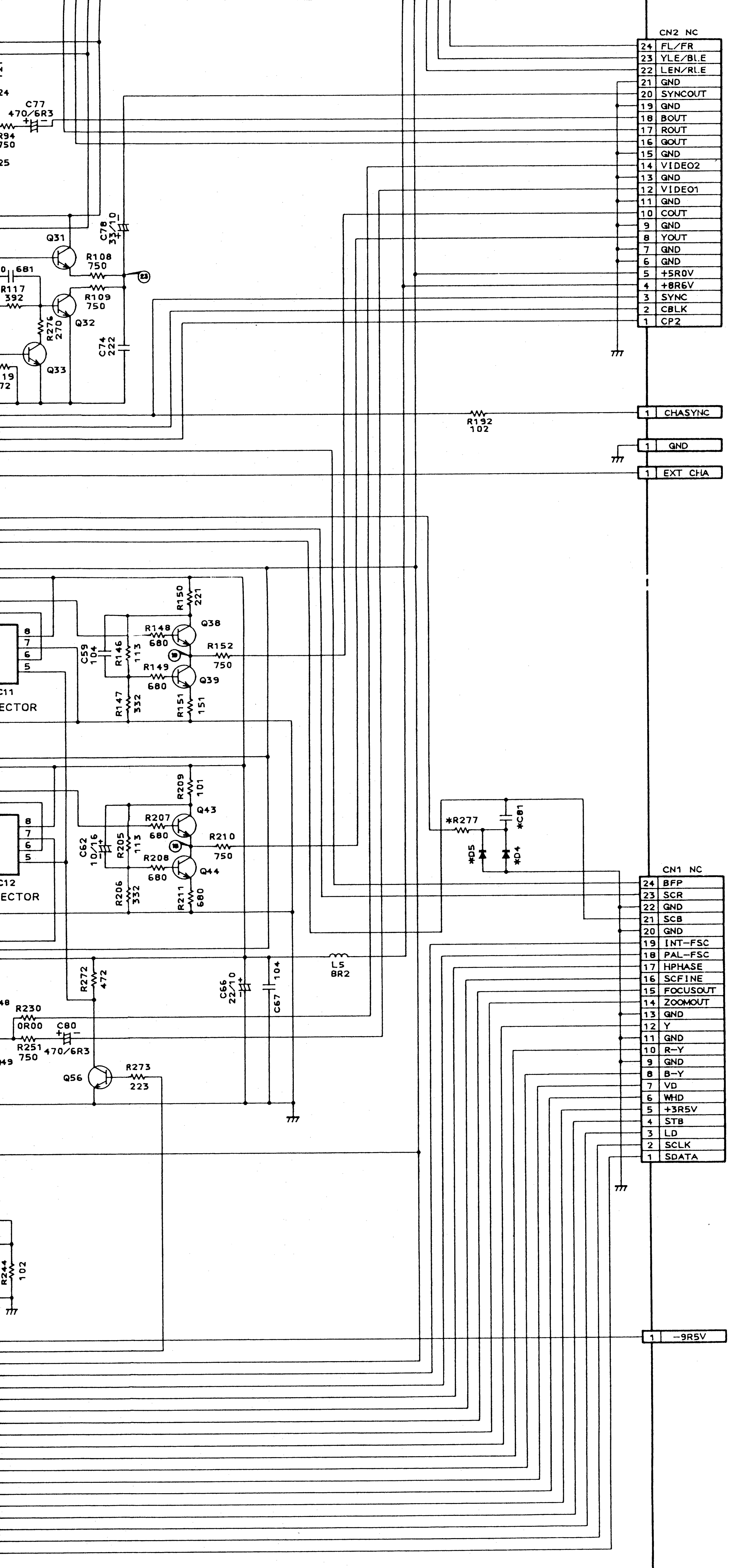
For Capacitor:

820 → 82 x 10^0 = 82pF
102 → 10 x 10^2 = 1000pF = 0.001μF
104 → 10 x 10^4 = 100000pF = 0.1μF

The suffix attached to capacitance indicates a type of capacitor.

6 7 8

Q17	G7	Q55	G3
Q18	F7	Q56	C7
Q19	F4	Q57	E7
Q20	F4	Q58	E6
Q21	F6	D1	C3
Q22	F6	D3	F2
Q23	F6	D4	C8
Q24	F7	D5	C8


CN2 NC
24 FL/FR
23 YLE/BLE
22 LEN/RLE
21 GND
20 SYNCOUT
19 GND
18 BOUT
17 ROUT
16 GOUT
15 GND
14 VIDEO2
13 GND
12 VIDEO1
11 GND
10 COUT
9 GND
8 YOUT
7 GND
6 GND
5 +5R0V
4 +8R6V
3 SYNC
2 CBLK
1 CP2
1 CHASYNC
1 GND
1 EXT CHA
R192 102
C77 470/6R3
R94 750
C78 33/10
Q31
R108 750
R117 392
681
Q32
R109 750
R276 270
C74 222
Q33
IC11
ECTOR
R150 221
R148 680
Q38
R152 750
C59 104
R146 113
R149 680
Q39
R147 332
R151 151
IC12
ECTOR
R209 101
R207 680
Q43
R210 750
C62 10/16
R205 113
R208 680
Q44
R206 332
R211 680
*R277
*C81
*D5
*D4
CN1 NC
24 BFP
23 SCR
22 GND
21 SCB
20 GND
19 INT-FSC
18 PAL-FSC
17 HPHASE
16 SCFINE
15 FOCUSOUT
14 ZOOMOUT
13 GND
12 Y
11 GND
10 R-Y
9 GND
8 B-Y
7 VD
6 WHD
5 +3R5V
4 STB
3 LD
2 SCLK
1 SDATA
L5 8R2
C66 22/10
C67 104
R272 472
R230 0R00
C80 470/6R3
R251 750
Q56
R273 223
R244 102
1 −9R5V

ould be read as follows:

<Example>

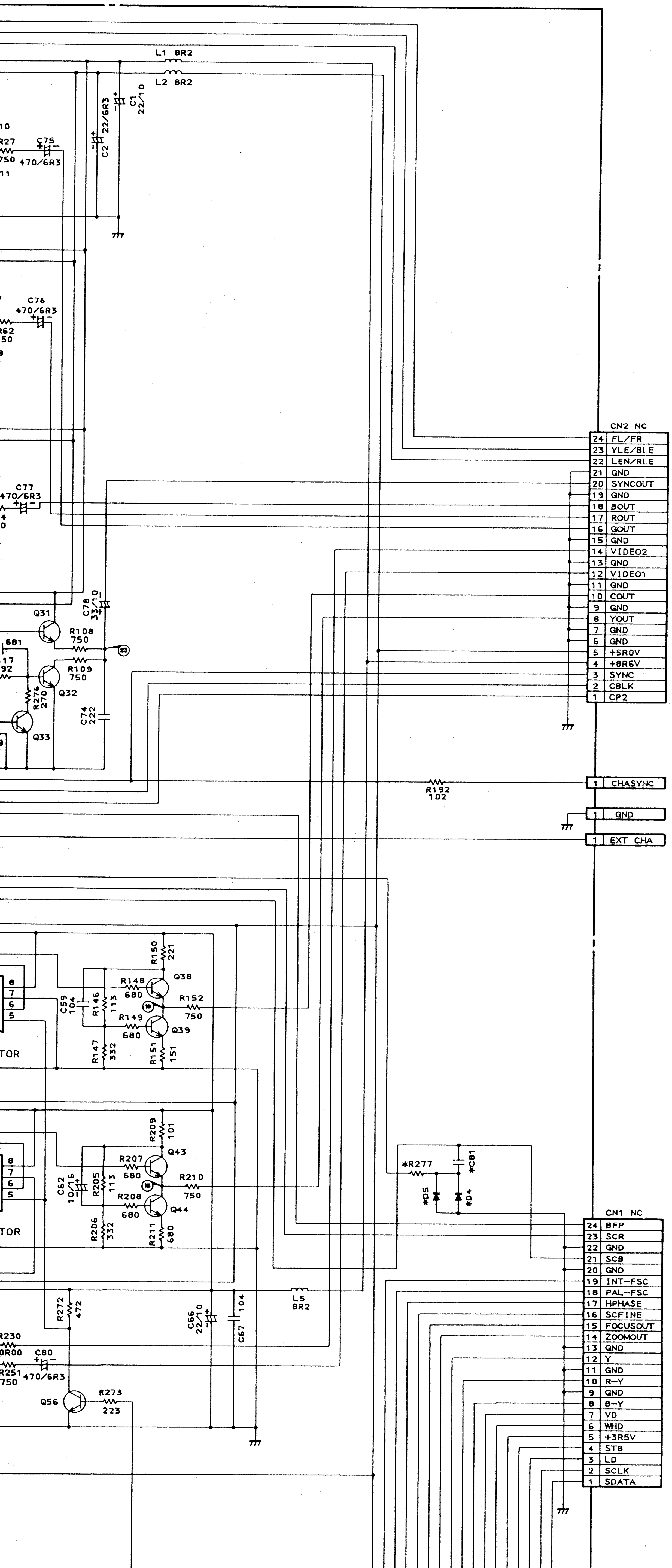
For Resistor:

330 → 33×10^0 = 33Ω
561 → 56×10^1 = 560Ω
123 → 12×10^3 = 12kΩ
0R00 = 0 Ω

For Capacitor:

820 → 82×10^0 = 82pF
102 → 10×10^2 = 1000pF = 0.001μF
104 → 10×10^4 = 100000pF = 0.1μF

The suffix attached to capacitance indicates a type of capacitor.

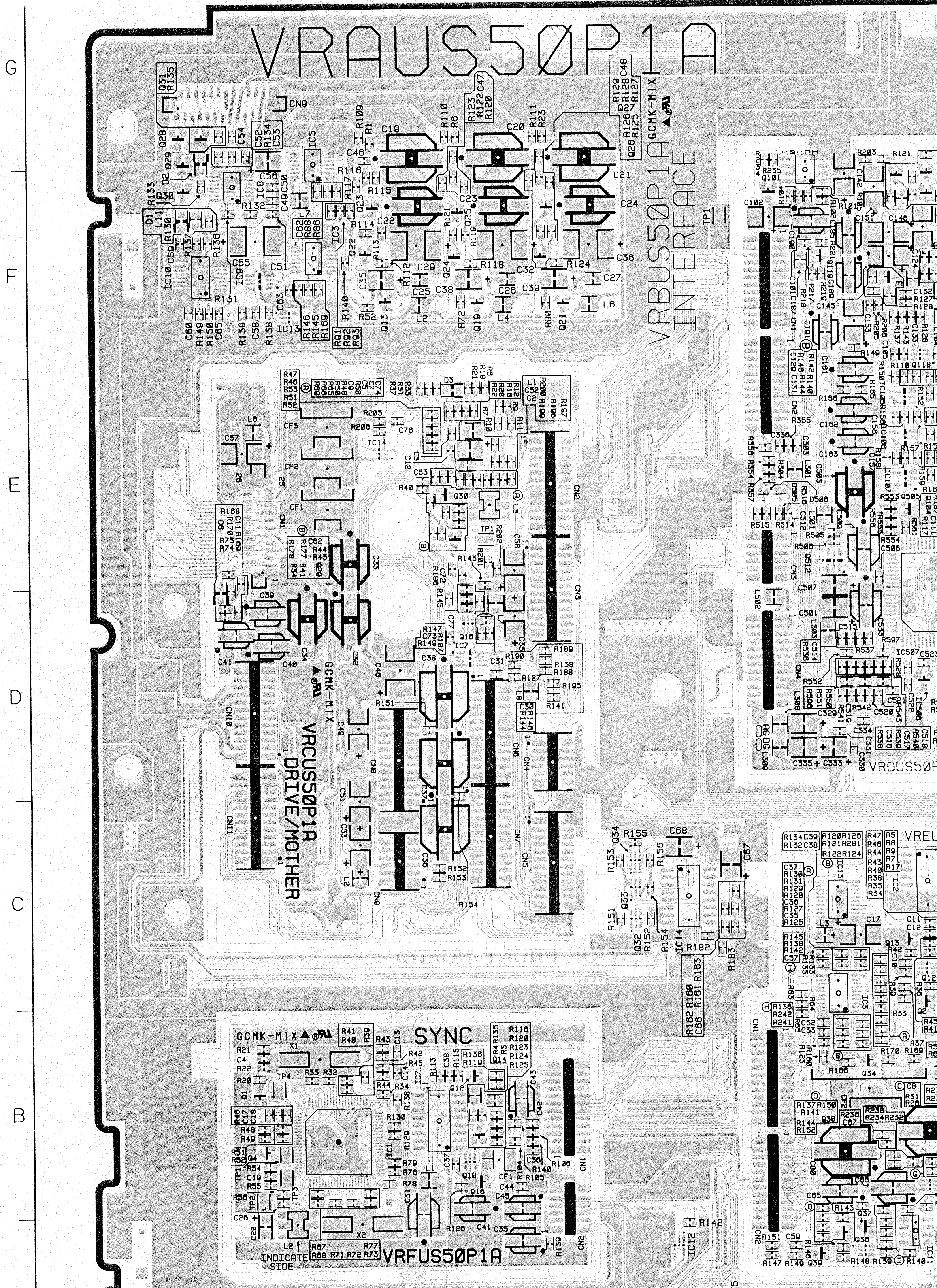

L1 8R2
L2 8R2
C1 22/10
C2 22/6R3
10
R27
750
C75 470/6R3
11
C76 470/6R3
R62
750
C77 470/6R3
Q31
C78 33/10
R108 750
681
17
92
R109 750
Q32
R276 270
C74 222
Q33
CN2 NC
24 FL/FR
23 YLE/BL.E
22 LEN/RL.E
21 GND
20 SYNCOUT
19 GND
18 BOUT
17 ROUT
16 GOUT
15 GND
14 VIDEO2
13 GND
12 VIDEO1
11 GND
10 COUT
9 GND
8 YOUT
7 GND
6 GND
5 +5R0V
4 +8R6V
3 SYNC
2 CBLK
1 CP2
R192 102
1 CHASYNC
1 GND
1 EXT CHA
R150 221
Q38
R148 680
C59 104
R146 113
R152 750
R149 680
Q39
R147 332
R151 151
8
7
6
5
TOR
R209 101
Q43
R207 680
R210 750
C62 10/16
R205 113
R208 680
Q44
R206 332
R211 680
8
7
6
5
TOR
*R277
*C81
*D5
*D4
CN1 NC
24 BFP
23 SCR
22 GND
21 SCB
20 GND
19 INT-FSC
18 PAL-FSC
17 HPHASE
16 SCFINE
15 FOCUSOUT
14 ZOOMOUT
13 GND
12 Y
11 GND
10 R-Y
9 GND
8 B-Y
7 VD
6 WHD
5 +3R5V
4 STB
3 LD
2 SCLK
1 SDATA
R272 472
C66 22/10
C67 104
L5 8R2
R230
0R00
C80 470/6R3
R251 750
Q56
R273 223

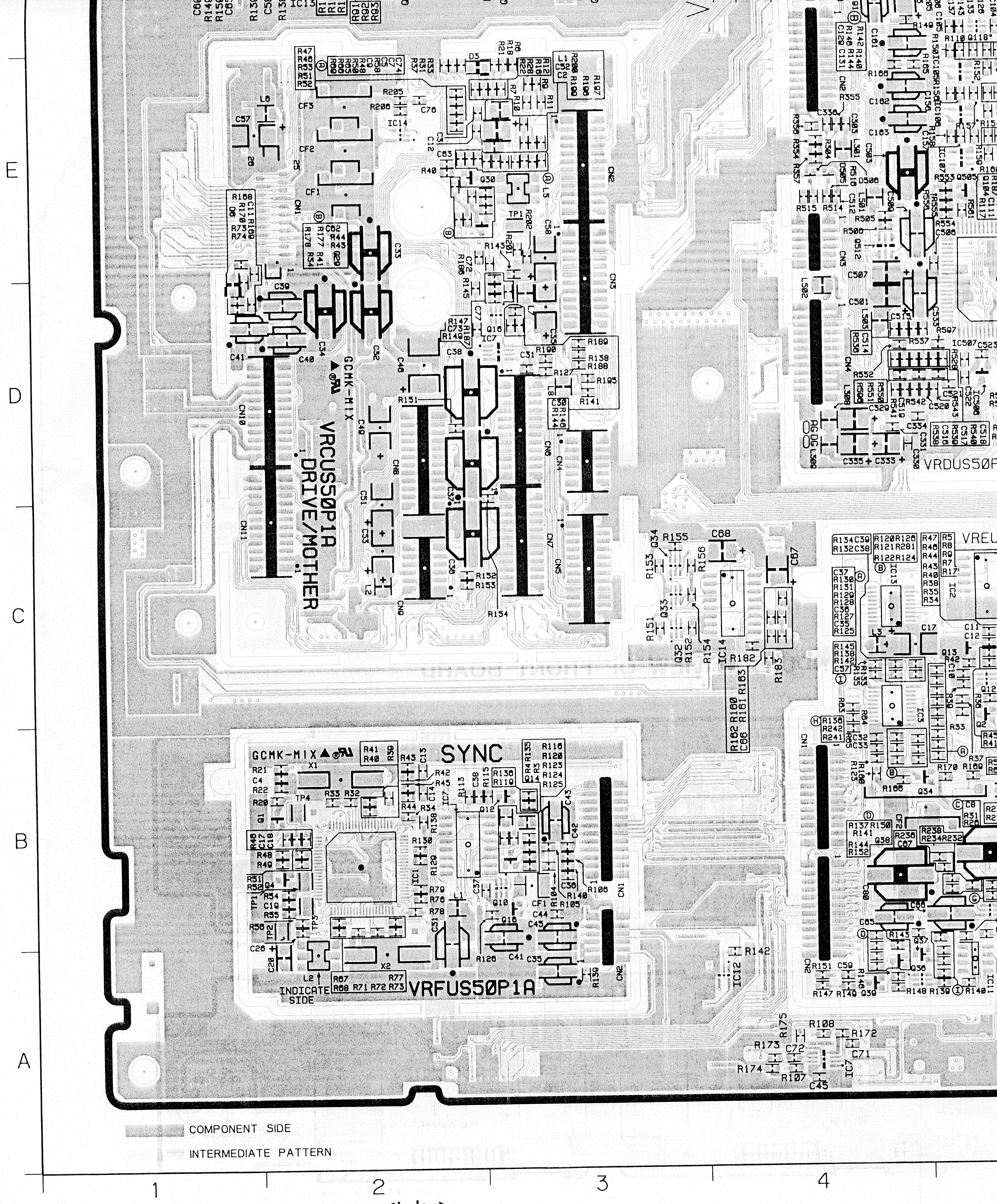
<Index>

ENCODER SECTION

IC1	G5	Q25	F7
IC2	G5	Q26	E5
IC3	E2	Q27	E6
IC4	E4	Q28	E6
IC5	C2	Q29	E6
IC6	C4	Q30	E6
IC8	G2	Q31	E7
IC9	F2	Q32	E7
IC10	F2	Q33	E7
IC11	D7	Q34	C3
IC12	C7	Q35	C3
IC13	E2	Q36	D6
Q1	G4	Q37	D6
Q2	G3	Q38	D7
Q3	F3	Q39	D7
Q4	G4	Q40	C6
Q5	G5	Q41	C6
Q6	G5	Q42	C6
Q7	G6	Q43	C7
Q8	G6	Q44	C7
Q9	G6	Q45	C6
Q10	G7	Q46	C6
Q11	G7	Q47	C6
Q12	F4	Q48	C7
Q13	G4	Q49	C7
Q14	F6	Q50	B6
Q15	F6	Q51	B7
Q16	G6	Q54	G3
Q17	G7	Q55	G3
Q18	F7	Q56	C7
Q19	F4	Q57	E7
Q20	F4	Q58	E6
Q21	F6	D1	C3
Q22	F6	D3	F2
Q23	F6	D4	C8
Q24	F7	D5	C8

MAIN BOARD


G
F
E
D
C
B
VRAUS50P1A
GCMK-MIX
VRBUS50P1A
INTERFACE
VRCUS50P1A
DRIVE/MOTHER
VRDUS50P
VREU
SYNC
VRFUS50P1A
INDICATE SIDE
CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN8
CN9
CN10
CN11


VRCUS50P1A
DRIVE/MOTHER
GCMK-MIX
SYNC
VRFUS50P1A
INDICATE SIDE
VRDUS50F
VREL
CN1
CN2
CN3
CN4
CN5
CN7
CN8
CN9
CN10
CN11
COMPONENT SIDE
INTERMEDIATE PATTERN
E
D
C
B
A
1
2
3
4

<Index>

SYNC SECTION

COMPONENT SIDE

IC1	B2
IC7	B2
Q1	B2
Q4	B2
Q10	B3
Q12	B3
Q14	B3
Q16	B3

PATTERN SIDE

IC2	B5
IC3	B5
IC4	B5
IC5	B4
IC6	B5
Q2	B5
Q3	B5
Q5	B5
Q6	B5
Q7	A4
Q8	B4
Q9	B5
Q11	B5
Q13	B4
Q15	B4
D1	B5
D2	B5
D3	A5
D4	A5

<Index>

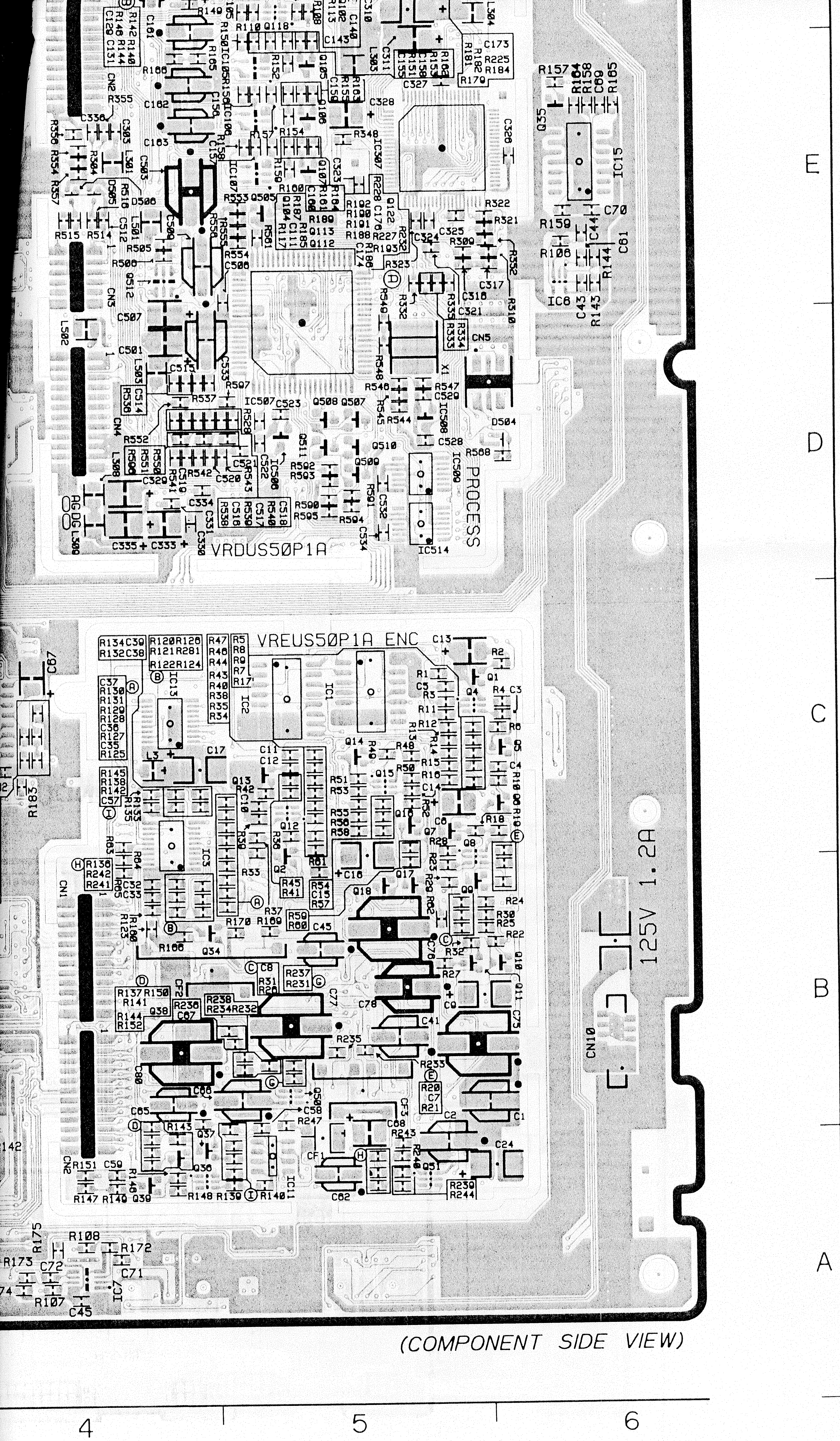
PROCESS SECTION

COMPONENT SIDE

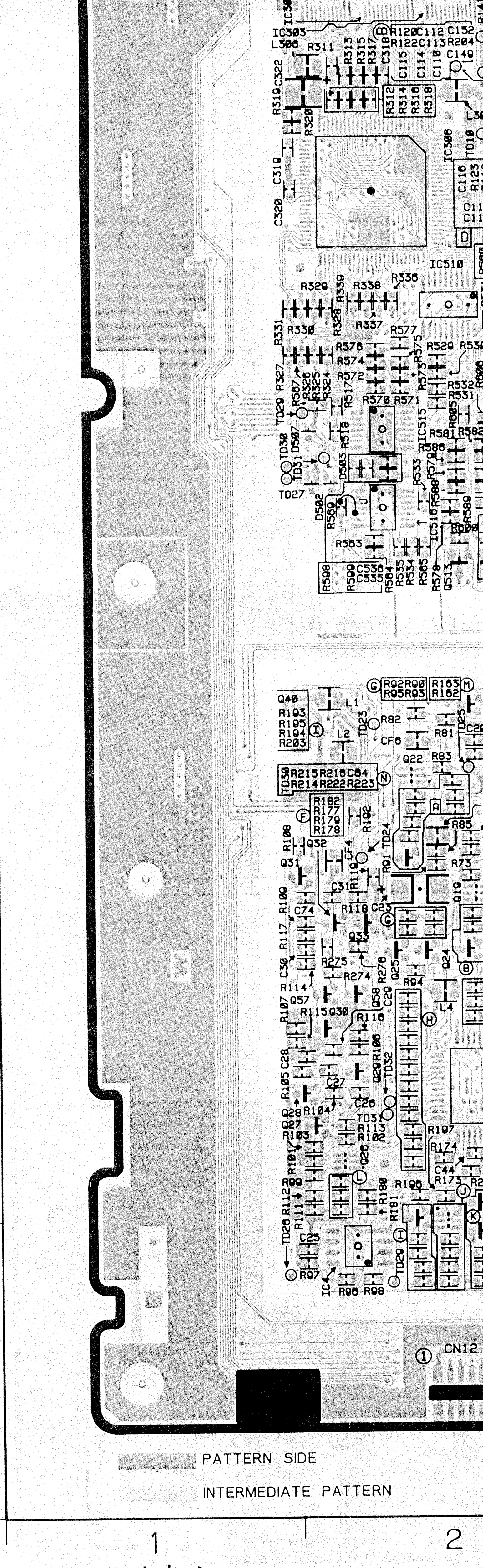
IC101	F4
IC105	E5
IC106	E5
IC107	E5
IC114	F5
IC115	F5
IC116	F5
IC506	D5
IC507	D5
IC508	D5
IC509	D5
IC514	D5
Q101	F4
Q102	F5
Q104	F5
Q105	E5
Q106	E5
Q107	E5
Q109	F5
Q110	F5
Q111	F5
Q112	F5
Q113	F5
Q114	F5
Q118	F5
Q119	F4
Q121	F5
Q122	G5
Q505	E5
Q507	D5
Q509	D5
Q510	D5
Q511	D5
D504	D6
D505	E4
D506	E4

PATTERN SIDE

IC103	F2
IC104	F3
IC108	E2
IC109	E2
IC110	E2
IC111	E3
IC112	E3
IC113	F2
IC117	F3
IC118	F2
IC119	F2
IC301	E3
IC303	F2
IC304	F2
IC305	F2
IC306	E2
IC308	D3
IC501	E3
IC502	D2
IC503	D2
IC505	D2
IC510	E2
IC512	D3
IC515	D2
IC517	D3
Q103	F3
Q108	F2
Q115	F3
Q116	F3
Q117	F3
Q120	F3
Q123	F3
Q124	F3
Q501	D3
Q502	D3
Q503	D3
Q506	E2
D502	D2
D503	D2
D507	D2


VRDUS50P1A
PROCESS
VREUS50P1A ENC
125V 1.2A
CN10
E
D
C
B
A
4
5
6

(COMPONENT SIDE VIEW)


PATTERN SIDE
INTERMEDIATE PATTERN
CN12
1
2

RN SIDE				
F2	IC308	D3	Q124	F3
F3	IC501	E3	Q501	D3
E2	IC502	D2	Q502	D3
E2	IC503	D2	Q503	D3
E2	IC505	D2	Q506	E2
E3	IC510	E2	D502	D2
E3	IC512	D3	D503	D2
F2	IC515	D2	D507	D2
F3	IC517	D3		
F2	Q103	F3		
F2	Q108	F2		
E3	Q115	F3		
F2	Q116	F3		
F2	Q117	F3		
F2	Q120	F3		
E2	Q123	F3		

COMPONENT SIDE			
IC3	F2	Q28	G1
IC6	E6	Q29	G1
IC7	A4	Q30	F1
IC8	F1	Q31	G1
IC12	A4	Q32	C3
IC14	C4	Q33	C3
IC15	E6	Q34	C3
Q13	F2	Q35	E6
Q19	F3	D1	F1
Q21	F3	D2	F1
Q22	F2		
Q23	F2		
Q24	F3		
Q25	F3		
Q26	F3		
Q27	F3		

PATTERN SIDE			
IC1	F5	Q14	F4
IC2	F4	Q15	F4
IC4	F4	Q17	F4
IC16	F6	Q18	F4
Q1	F5		
Q2	F5		
Q3	F5		
Q4	F5		
Q5	F5		
Q6	F5		
Q7	F4		
Q9	F4		
Q10	F4		
Q11	F5		
Q12	F4		

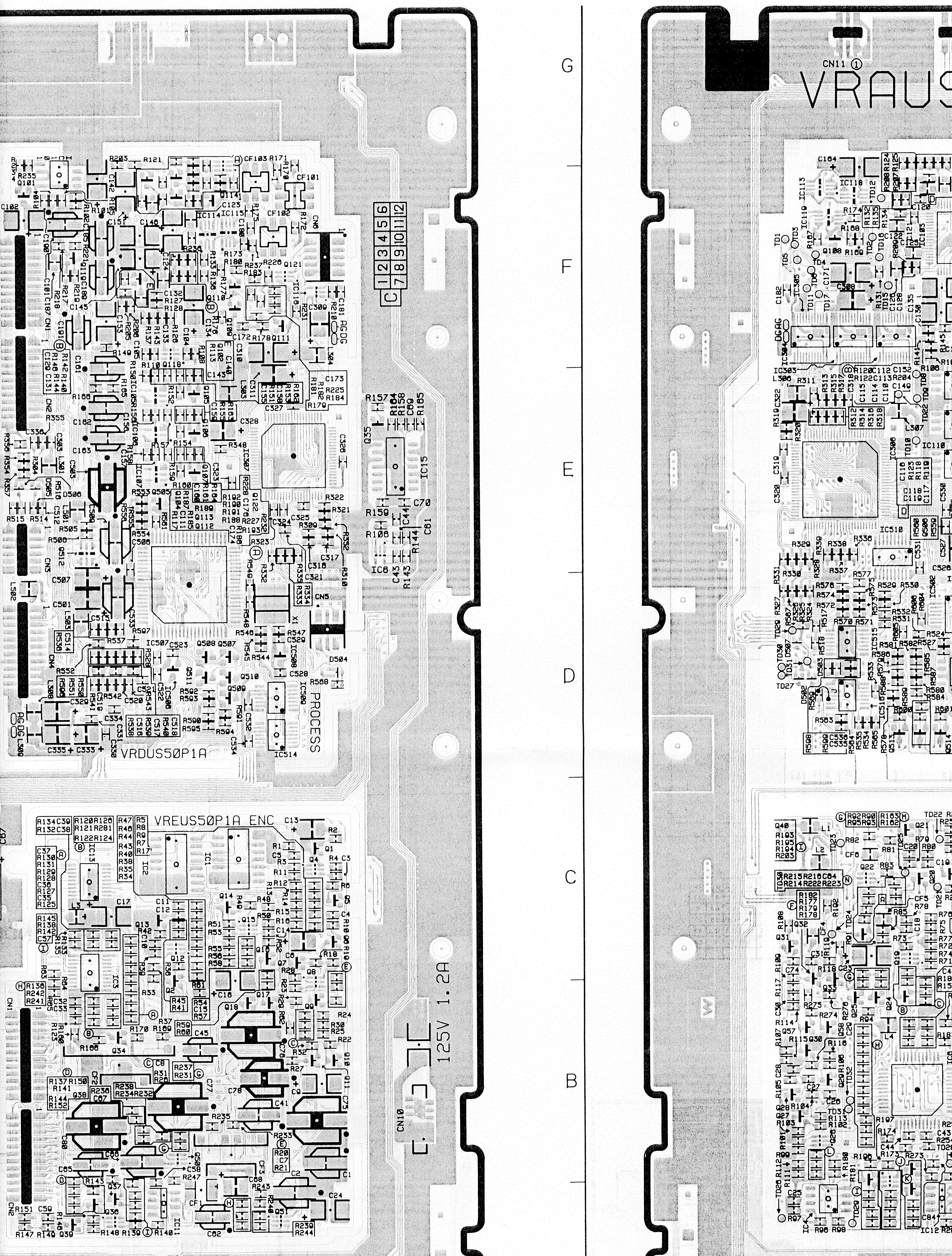
<Index>

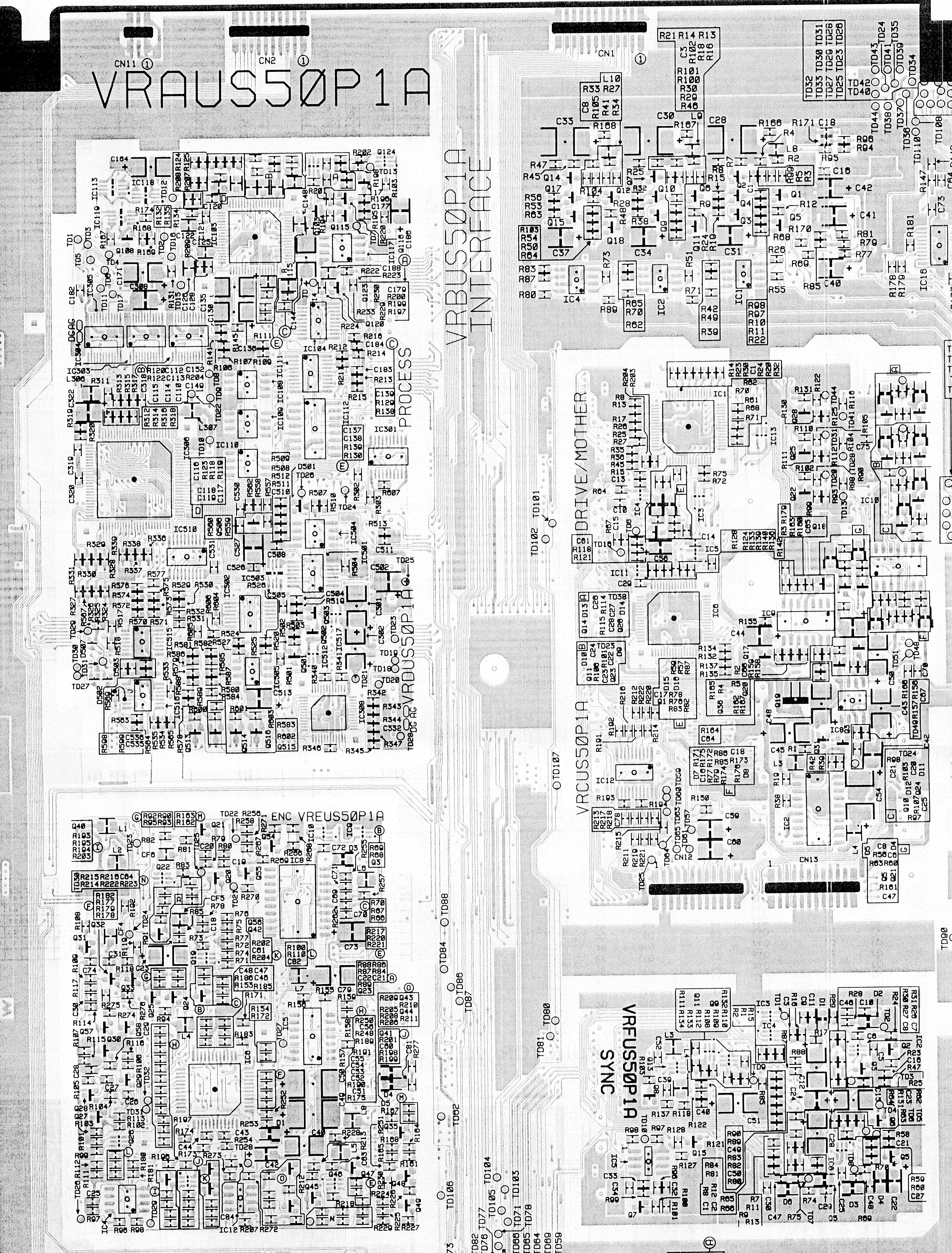
DRIVE/MOTHER

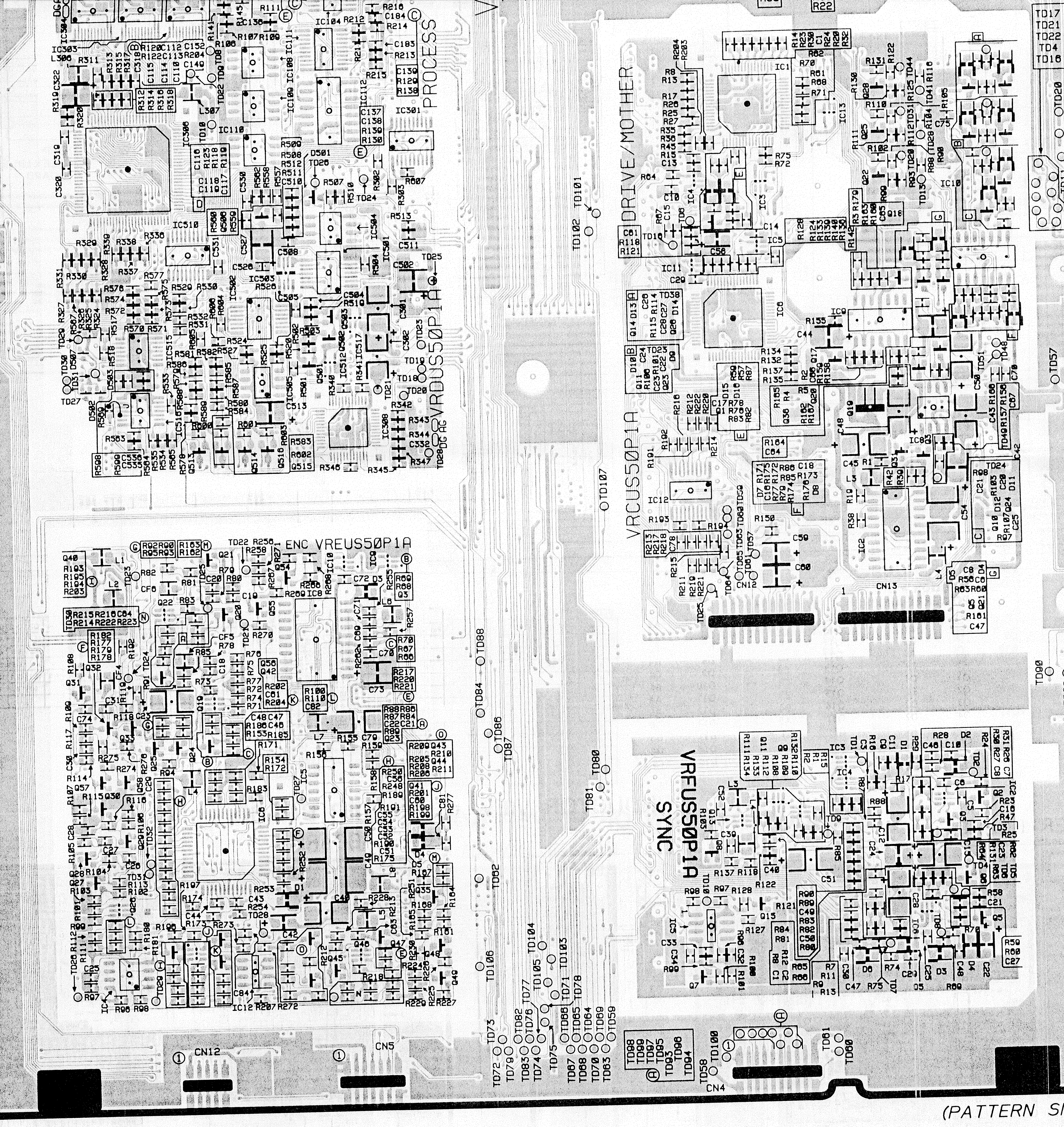
COMPONENT SIDE	
IC7	D3
IC14	E2
Q16	D3
Q29	E3
Q30	E3
D3	E3

PATTERN SIDE		
IC1	E5	Q19
IC2	C5	Q20
IC3	E5	Q21
IC4	E4	Q22
IC5	E5	Q25
IC6	D4	Q28
IC8	D5	Q31
IC9	D5	Q36
IC11	D4	D4
IC12	C4	D5
IC13	E5	D15
Q1	E4	D16
Q3	D5	
Q5	D5	
Q17	D5	
Q18	D5	

CONDUCTOR VIEW OF MAIN BOARD


G
F
E
D
C
B
VRDUS50P1A
PROCESS
VREUS50P1A ENC
VRAUS
CN11 ①
CN10
125V 1.2A
1 2 3 4 5 6
7 8 9 10 11 12
C
AGDG
IC15
IC6
CN1
CN2
CN3
CN4
CN5
IC1
IC2
IC3
IC11
IC13
IC118
IC508
IC514
X1
DGAG


CN11 ①
CN2 ①
VRAUS50P1A
CN1 ①
VRBUS50P1A
INTERFACE
PROCESS
VRDUS50P1A
DRIVE/MOTHER
VRCUS50P1A
ENC VREUS50P1A
VRFUS50P1A
SYNC
CN12
CN13
DG AG



PROCESS
VRDUS50P1A
DRIVE/MOTHER
VRCUS50P1A
ENC VREUS50P1A
VRFUS50P1A
SYNC
CN12
CN5
CN4
CN13
CN12
(PATTERN SI

▨ PATTERN SIDE

▨ INTERMEDIATE PATTERN

2
3
4
5

x>

E/MOTHER

ENT SIDE
D3
E2
D3
E3
E3
E3

PATTERN SIDE

IC1	E5	Q19	D5
IC2	C5	Q20	D5
IC3	E5	Q21	D5
IC4	E4	Q22	E5
IC5	E5	Q25	E5
IC6	D4	Q28	E5
IC8	D5	Q31	D5
IC9	D5	Q36	D5
IC11	D4	D4	E5
IC12	C4	D5	E5
IC13	E5	D15	E4
Q1	E4	D16	E4
Q3	D5		
Q5	D5		
Q17	D5		
Q18	D5		

<Index>

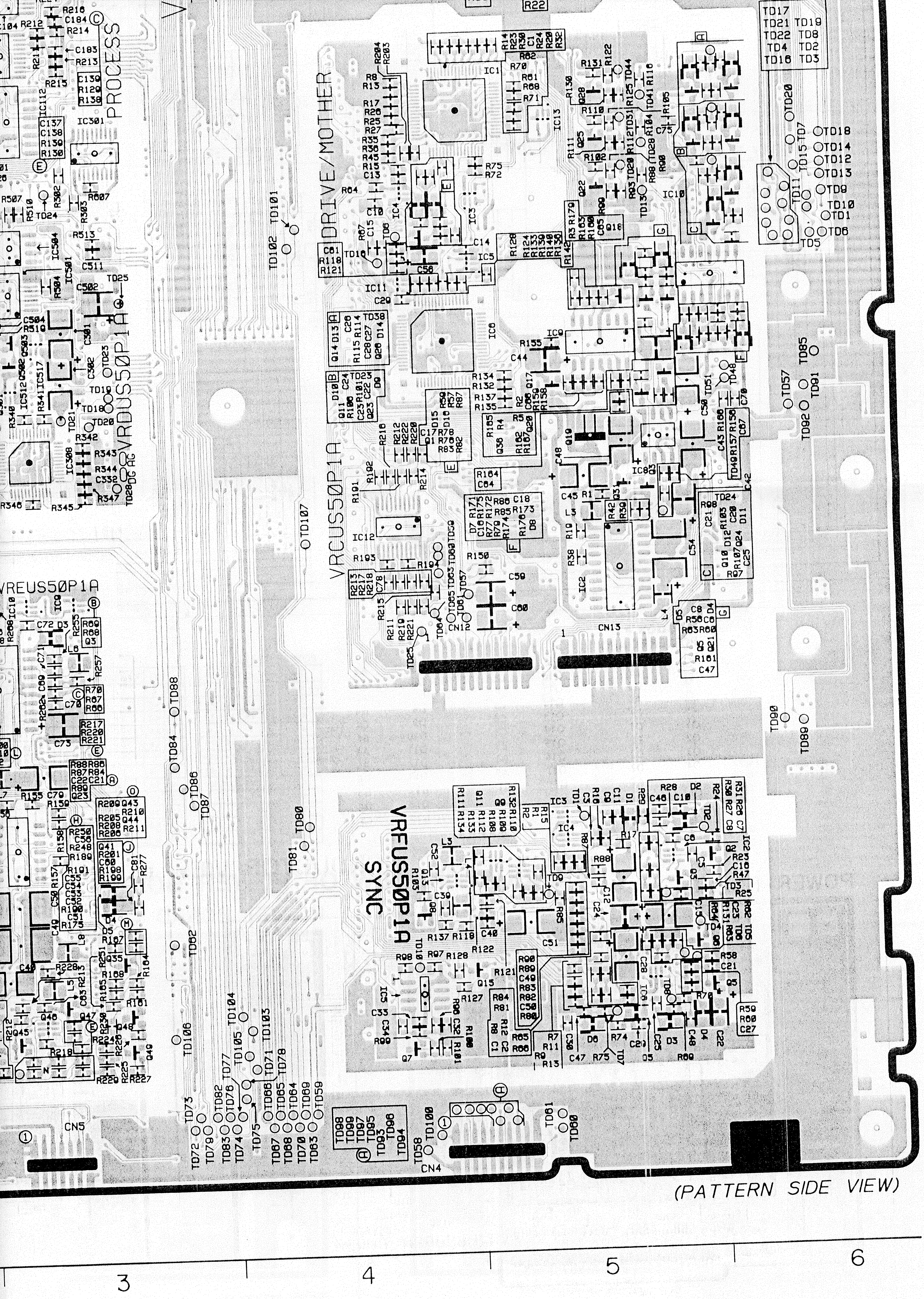
ENCODER SECTION

COMPONENT SIDE

IC1	C5	Q13	C5
IC2	C5	Q14	C5
IC3	C4	Q15	C5
IC11	A5	Q16	C5
IC13	C4	Q17	B5
Q1	C5	Q18	B5
Q2	B5	Q34	B4
Q4	C5	Q36	A4
Q5	C6	Q37	A4
Q6	C6	Q38	A4
Q7	C5	Q39	A4
Q8	C5	Q50	B5
Q9	B5	Q51	A5
Q10	B6		
Q11	B5		
Q12	C5		

PATTERN SIDE

IC4	A2	Q27	B2	Q48	A3
IC5	B3	Q28	B1	Q49	A3
IC6	B2	Q29	B2	Q54	C2
IC8	C3	Q30	B2	Q55	C2
IC9	C3	Q31	C2	Q56	B2
IC10	C3	Q32	C2	Q57	B2
IC12	A2	Q33	B2	Q58	B2
Q3	B2	Q35	B3	D1	B2
Q19	C2	Q40	A2	D3	C3
Q20	C2	Q41	A2	D4	B3
Q21	C2	Q42	A2	D5	B3
Q22	C2	Q43	B2		
Q23	C2	Q44	A2		
Q24	B2	Q45	A3		
Q25	B2	Q46	A3		
Q26	B2	Q47	B3		


PROCESS
VRDUS50P1A
DRIVE/MOTHER
VRCUS50P1A
VREUS50P1A
VRFUS50P1A
SYNC
CN4
CN5
CN12
CN13
3
4
5
6

(PATTERN SIDE VIEW)

<Index>

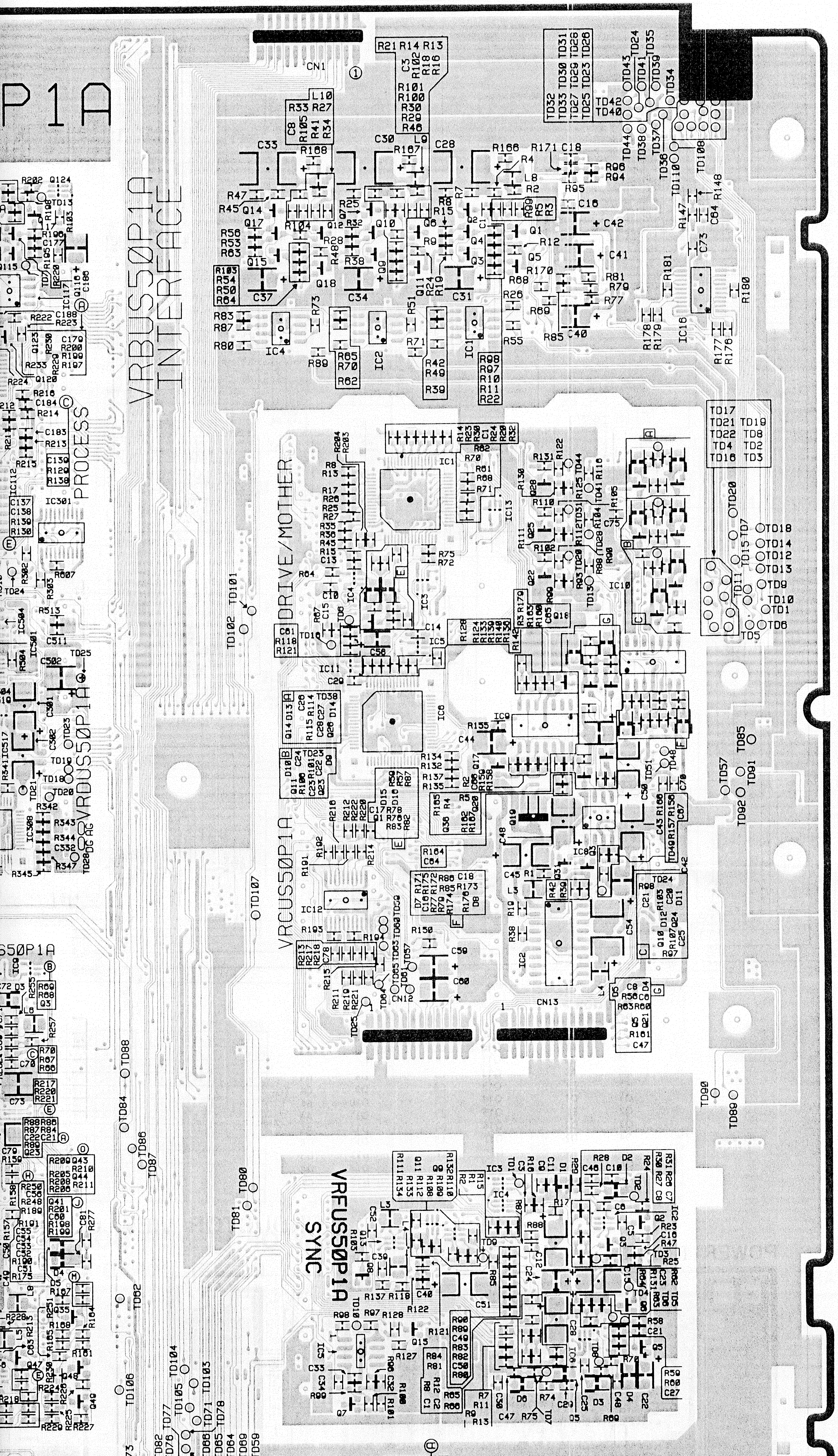
ENCODER SECTION

COMPONENT SIDE

IC1	C5	Q13	C5
IC2	C5	Q14	C5
IC3	C4	Q15	C5
IC11	A5	Q16	C5
IC13	C4	Q17	B5
Q1	C5	Q18	B5
Q2	B5	Q34	B4
Q4	C5	Q36	A4
Q5	C6	Q37	A4
Q6	C6	Q38	A4
Q7	C5	Q39	A4
Q8	C5	Q50	B5
Q9	B5	Q51	A5
Q10	B6		
Q11	B5		
Q12	C5		

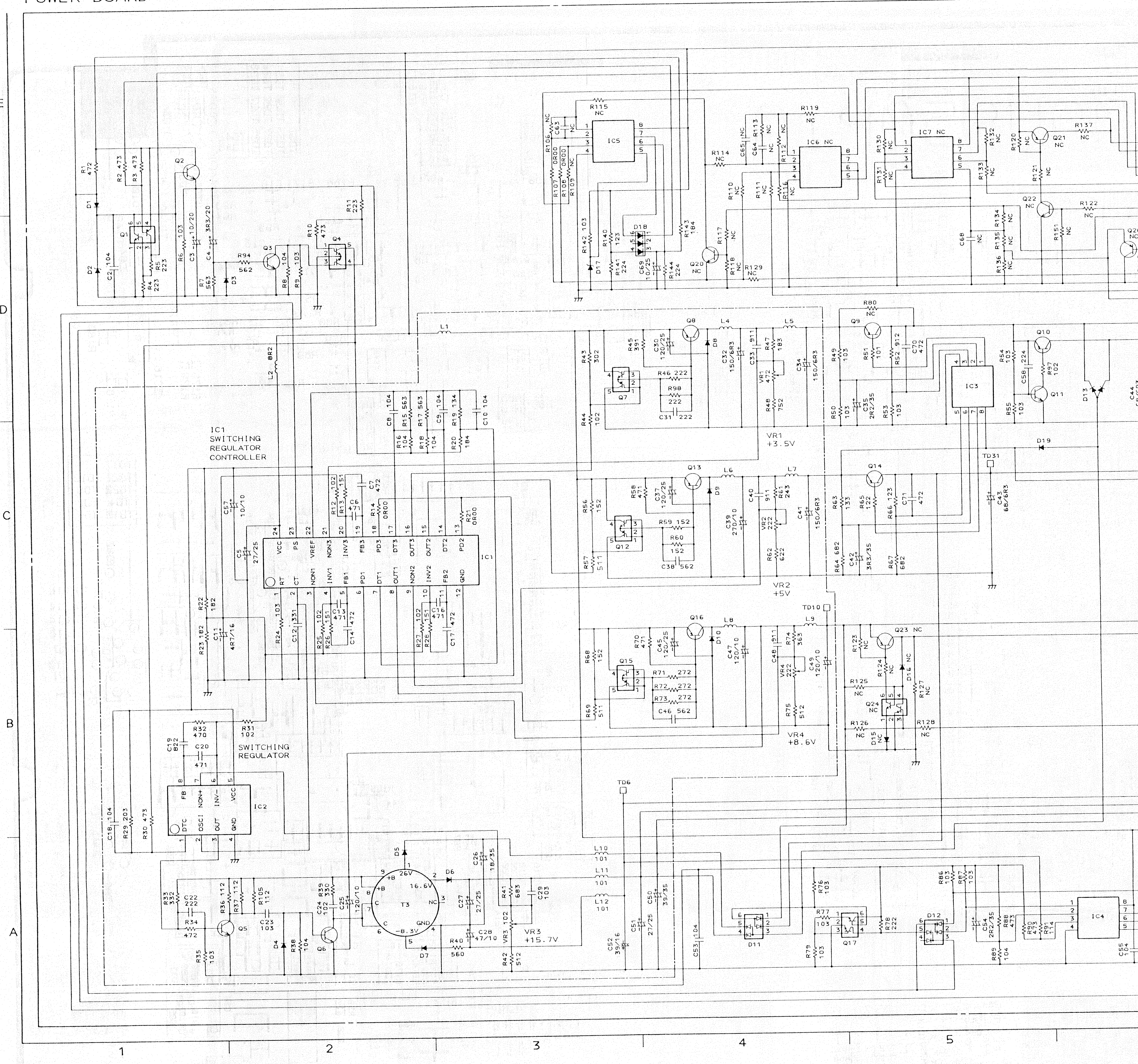
PATTERN SIDE

IC4	A2	Q27	B2	Q48	A3
IC5	B3	Q28	B1	Q49	A3
IC6	B2	Q29	B2	Q54	C2
IC8	C3	Q30	B2	Q55	C2
IC9	C3	Q31	C2	Q56	B2
IC10	C3	Q32	C2	Q57	B2
IC12	A2	Q33	B2	Q58	B2
Q3	B2	Q35	B3	D1	B2
Q19	C2	Q40	A2	D3	C3
Q20	C2	Q41	A2	D4	B3
Q21	C2	Q42	A2	D5	B3
Q22	C2	Q43	B2		
Q23	C2	Q44	A2		
Q24	B2	Q45	A3		
Q25	B2	Q46	A3		
Q26	B2	Q47	B3		


P1A
VRBUS50P1A
INTERFACE
DRIVE/MOTHER
VRCUS50P1A
VRFUS50P1A
SYNC
PROCESS
VRDUS50P1A
CN1
CN12
CN13
IC1
IC2
IC3
IC4
IC5
IC6
IC8
IC9
IC10
IC11
IC12
IC13
IC16

SCHEMATIC DIAGRAM OF POWER BOARD

POWER BOARD


IC1
SWITCHING
REGULATOR
CONTROLLER
SWITCHING
REGULATOR
IC2
IC3
IC4
IC5
IC6 NC
IC7 NC
T3
VR1
+3.5V
VR2
+5V
VR3
+15.7V
VR4
+8.6V
TD6
TD10
TD31
E
D
C
B
A
1
2
3
4
5

<Index>

POWER BOARD

IC1	C2	Q9	D5	D5	A2
IC2	B1	Q10	D5	D6	A3
IC3	D5	Q11	D5	D7	A2
IC4	A6	Q12	C3	D8	D4
IC5	E3	Q13	C4	D9	C4
Q1	D1	Q14	C5	D10	B4
Q2	E1	Q15	B3	D11	A4
Q3	D2	Q16	B4	D12	A5
Q4	D2	Q17	A5	D13	D6
Q5	A2	D1	E1	D17	D3
Q6	A2	D2	D1	D18	D4
Q7	D3	D3	D2	D19	C5
Q8	D4	D4	A2		

POWER BOARD

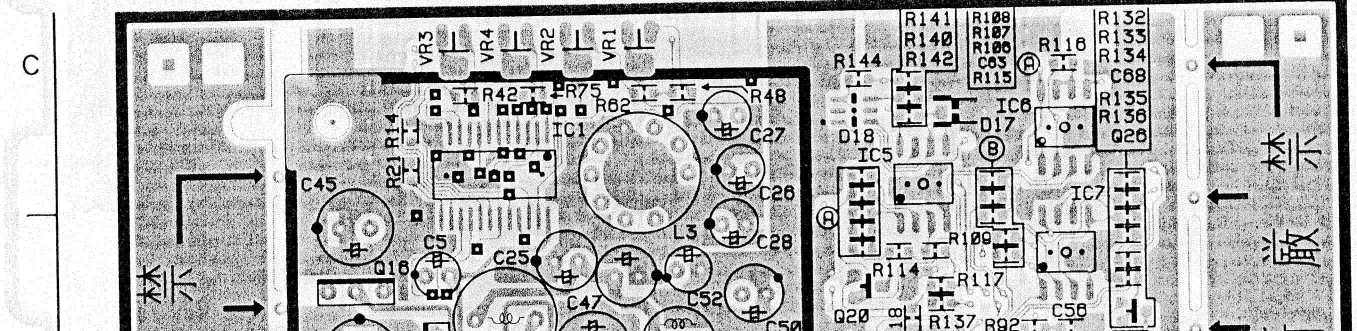
	IC1	IC2	IC3	IC4	IC5
Pin 1	0.9	1.7	2.9	0	11.7
2	1.7	1.7	1.9	4.6	3.0
3	1.2	2.8	1.9	1.6	3.0
4	1.2	0	0	0	0
5	1.6	2.5	1.8	4.6	7.4
6	0	1.2	1.8	7.4	10.4
7	1.4	1.2	3.8	0	-0.1
8	3.4	1.3	5.2	12.1	12.1
9	1.2				
10	1.2				
11	1.7				
12	0				

	IC1	IC2	IC3	IC4	IC5
13	0				
14	1.6				
15	6.4				
16	8.8				
17	1.6				
18	0				
19	1.8				
20	1.2				
21	1.2				
22	2.5				
23	8.0				
24	12.1				

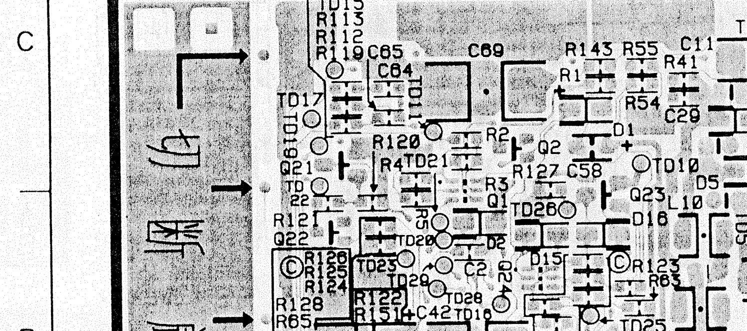
	B	C
Q2	7.4	12.1
3	0	0
5	0.1	1.0
6	-0.1	8.5
8	11.9	3.8
9	3.1	3.6
10	2.8	3.5
11	0.6	0
13	12.1	5.4
14	4.6	5.0
16	12.2	8.7

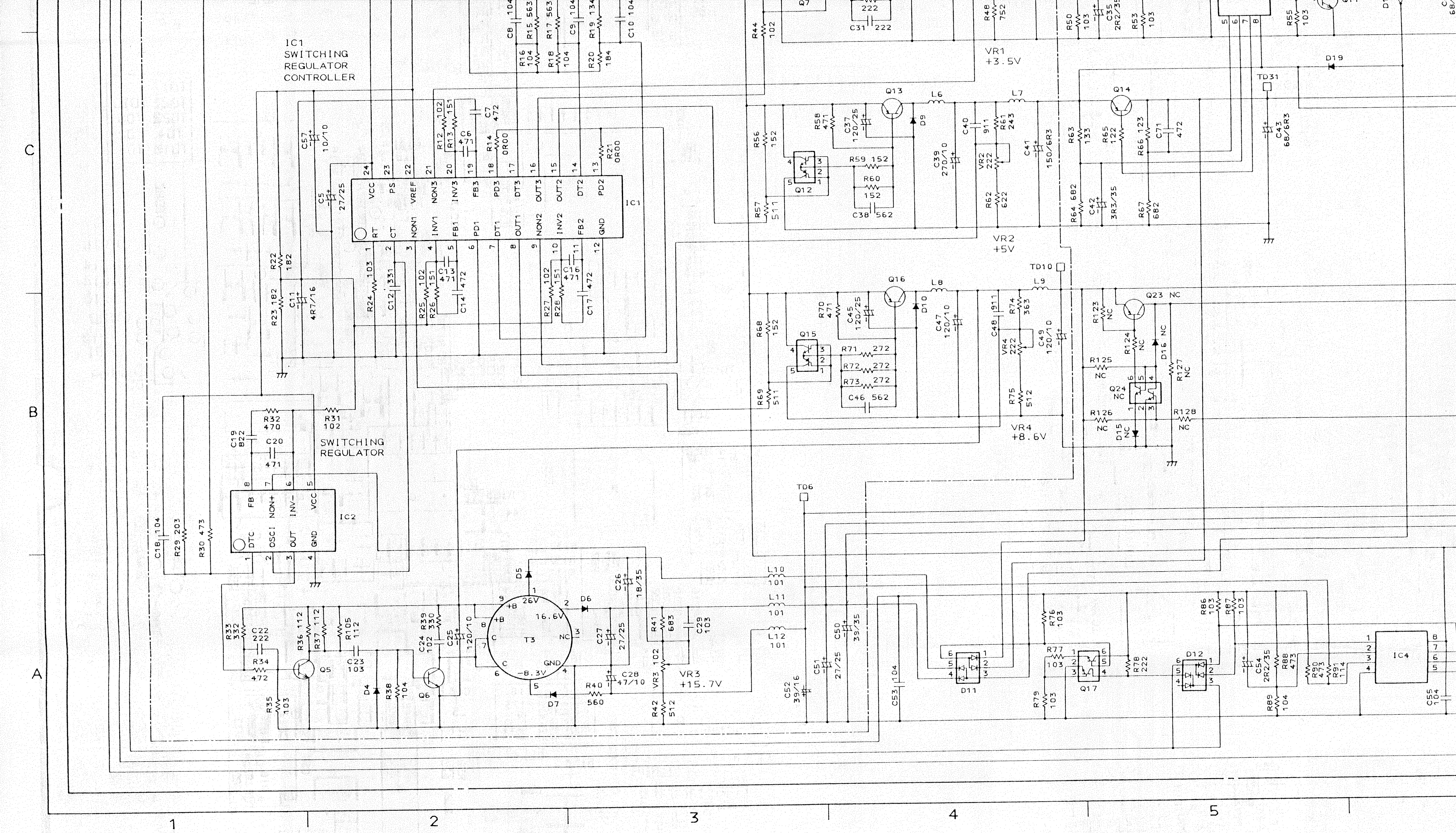
CONDUCTOR VIEW OF POWER BOARD

POWER BOARD


C
VR3
VR4
VR2
VR1
R42
R75
R62
R48
R14
R21
IC1
C27
C26
C28
C45
C5
C25
Q16
C47
L3
C52
C50
R141
R140
R142
R108
R107
R106
C63
R113
R144
R116
D17
IC6
IC5
R132
R133
R134
C68
R135
R136
Q20
IC7
R109
R114
R117
Q20
R137
R92
C56

POWER BOARD


C
TD15
R113
R112
R119
C65
C64
C69
R143
R55
C11
R41
TD17
R1
R54
C29
R120
D1
R2
Q2
R4
TD21
R127
C58
TD10
R3
Q1
TD26
Q23
L10
D5
Q21
R12
Q22
TD20
D16
D15
R123
R63
R128
R65
C42
TD25


IC1
SWITCHING
REGULATOR
CONTROLLER
IC2
SWITCHING
REGULATOR
VR1
+3.5V
VR2
+5V
VR4
+8.6V
VR3
+15.7V
T3
IC4
1
2
3
4
5

<Index>
POWER BOARD

IC1	C2
IC2	B1
IC3	D5
IC4	A6
IC5	E3
Q1	D1
Q2	E1
Q3	D2
Q4	D2
Q5	A2
Q6	A2
Q7	D3
Q8	D4
Q9	D5
Q10	D5
Q11	D5
Q12	C3
Q13	C4
Q14	C5
Q15	B3
Q16	B4
Q17	A5
D1	E1
D2	D1
D3	D2
D4	A2
D5	A2
D6	A3
D7	A2
D8	D4
D9	C4
D10	B4
D11	A4
D12	A5
D13	D6
D17	D3
D18	D4
D19	C5

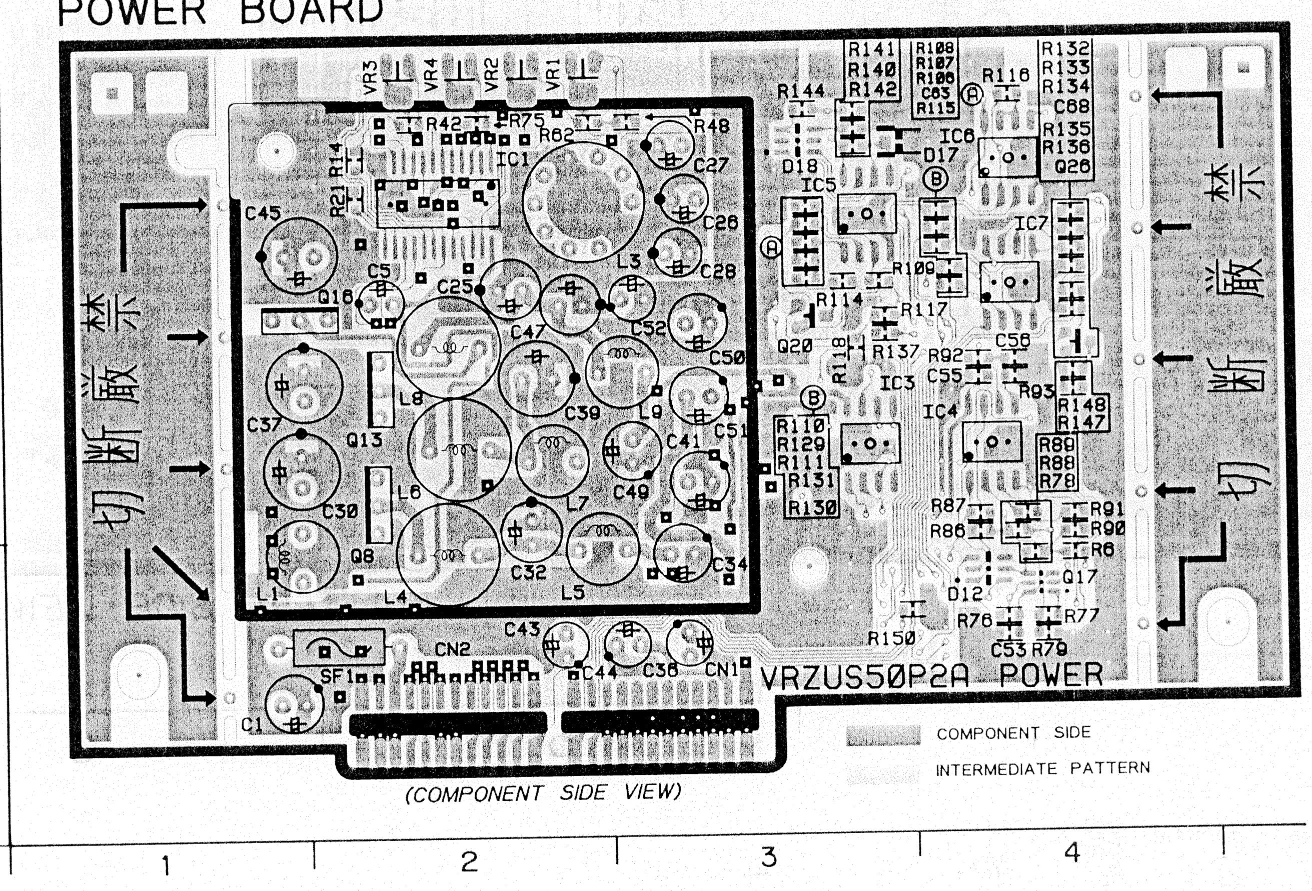
POWER BOARD

	IC1	IC2	IC3	IC4	IC5
Pin 1	0.9	1.7	2.9	0	11.7
2	1.7	1.7	1.9	4.6	3.0
3	1.2	2.8	1.9	1.6	3.0
4	1.2	0	0	0	0
5	1.6	2.5	1.8	4.6	7.4
6	0	1.2	1.8	7.4	10.4
7	1.4	1.2	3.8	0	-0.1
8	3.4	1.3	5.2	12.1	12.1
9	1.2				
10	1.2				
11	1.7				
12	0				
13	0				
14	1.6				
15	6.4				
16	8.8				
17	1.6				
18	0				
19	1.8				
20	1.2				
21	1.2				
22	2.5				
23	8.0				
24	12.1				

	B	C
Q2	7.4	12.1
3	0	0
5	0.1	1.0
6	-0.1	8.5
8	11.9	3.8
9	3.1	3.6
10	2.8	3.5
11	0.6	0
13	12.1	5.4
14	4.6	5.0
16	12.2	8.7

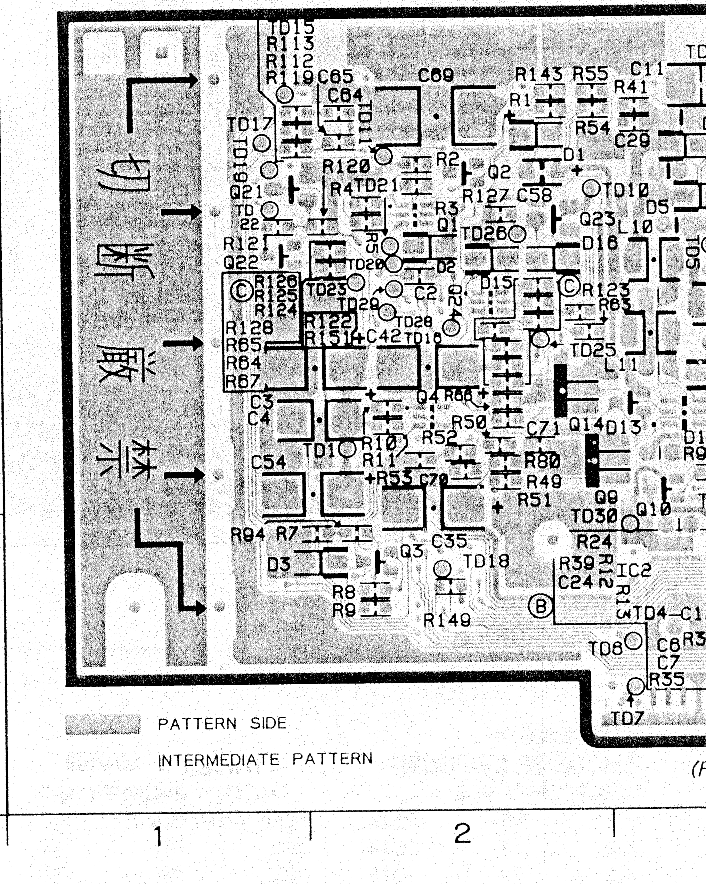
CONDUCTOR VIEW OF POWER BOARD

POWER BOARD


C
B
A
1
2
3
4
VR3
VR4
VR2
VR1
IC1
IC3
IC4
IC5
IC6
IC7
Q8
Q13
Q16
Q17
Q20
Q26
C45
C37
C30
C25
C47
C39
C49
C50
C51
C27
C28
C26
C52
C32
C34
C41
C43
C44
C36
C1
L1
L3
L4
L5
L6
L7
L8
L9
CN1
CN2
SF1
D12
D17
D18
VRZUS50P2A POWER
COMPONENT SIDE
INTERMEDIATE PATTERN

(COMPONENT SIDE VIEW)

POWER BOARD


C
B
A
1
2
TD15
TD17
TD21
TD10
TD18
TD26
TD30
TD4
TD7
TD8
Q2
Q3
Q4
Q10
Q14
Q22
Q23
IC2
D1
D3
D5
D13
D15
D16
PATTERN SIDE
INTERMEDIATE PATTERN

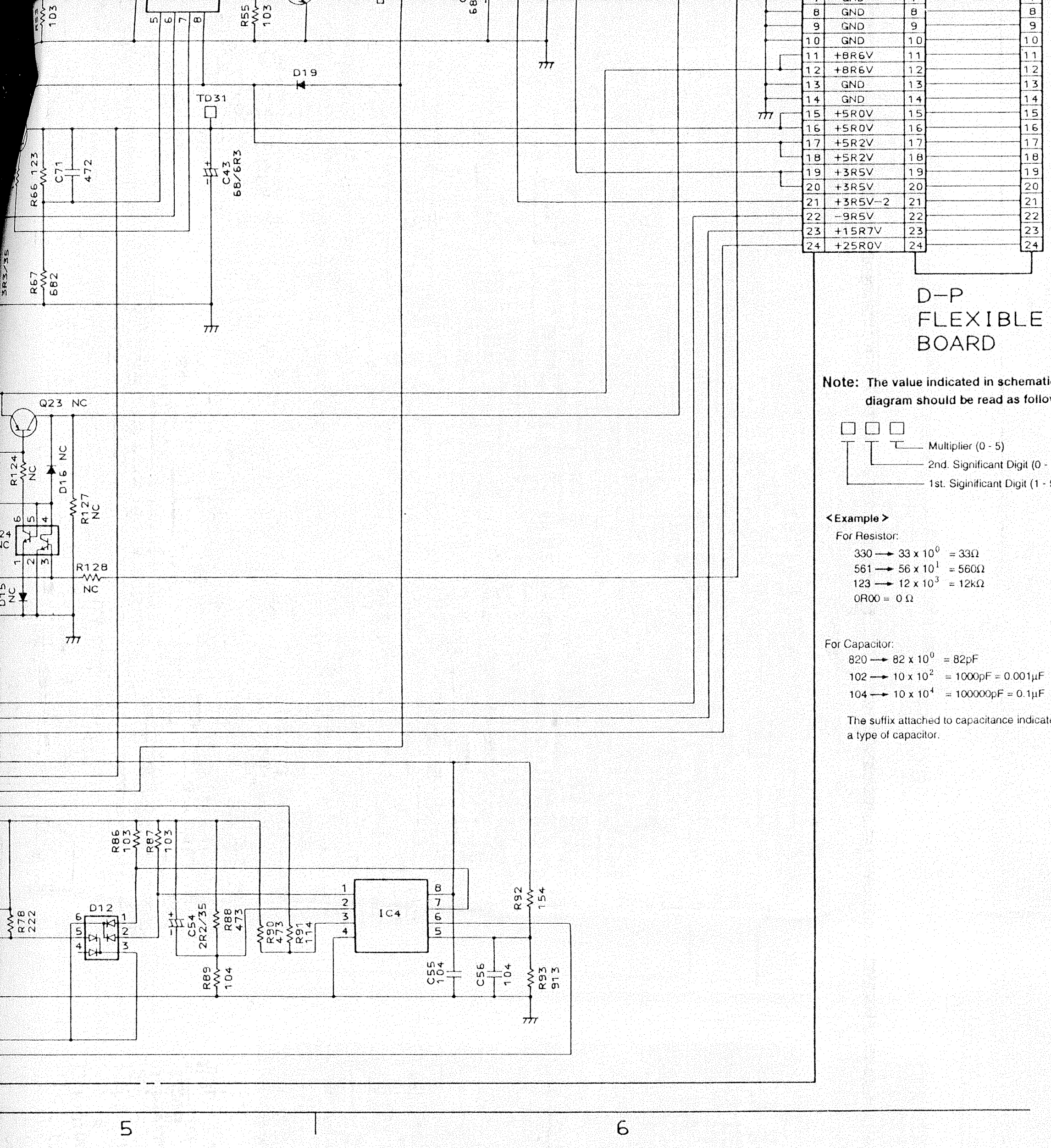
<Index>
POWER BOARD

COMPONENT SIDE

IC1	C2
IC3	B3
IC4	B4
IC5	C3
Q8	B2
Q13	B2
Q16	B2
Q17	A4
D12	A4
D17	C4
D18	C3

PATTERN SIDE

IC2	C4
Q1	B2
Q2	C2
Q3	A2
Q4	B2
Q5	B3
Q6	B3
Q7	B3
Q9	B2
Q10	B3
Q11	B3
Q12	B3
Q14	B2
Q15	B4
D1	B2
D2	B2
D3	A2
D4	B3
D5	C3
D6	C3
D7	C3
D8	B4
D9	B4
D10	B4
D11	B3
D13	B3
D19	B3


TO DRIVE/MOTHER SECTION ...CN10
D-P FLEXIBLE BOARD
GND
+8R6V
+5R0V
+5R2V
+3R5V
+3R5V-2
-9R5V
+15R7V
+25R0V
IC4
5
6

Note: The value indicated in schematic diagram should be read as follows:

□□□
- Multiplier (0 - 5)
- 2nd. Significant Digit (0 - 9)
- 1st. Siginificant Digit (1 - 9)

<Example>

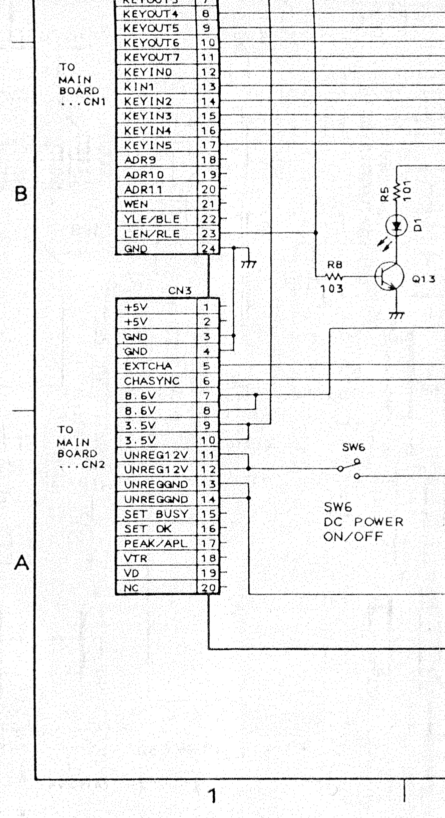
For Resistor:

330 → 33 x 10^0 = 33Ω
561 → 56 x 10^1 = 560Ω
123 → 12 x 10^3 = 12kΩ
0R00 = 0 Ω

For Capacitor:

820 → 82 x 10^0 = 82pF
102 → 10 x 10^2 = 1000pF = 0.001μF
104 → 10 x 10^4 = 100000pF = 0.1μF

The suffix attached to capacitance indicates a type of capacitor.


TO MAIN BOARD ...CN1
TO MAIN BOARD ...CN2
CN3
KEYOUT4
KEYOUT5
KEYOUT6
KEYOUT7
KEYIN0
KIN1
KEYIN2
KEYIN3
KEYIN4
KEYIN5
ADR9
ADR10
ADR11
WEN
YLE/BLE
LEN/RLE
GND
+5V
EXTCHA
CHASYNC
8.6V
3.5V
UNREG12V
UNREGGND
SET BUSY
SET OK
PEAK/APL
VTR
VD
NC
SW6
SW6 DC POWER ON/OFF
Q13
D1
R8
R5
B
A
1

RD

IC4	IC5
0	11.7
4.6	3.0
1.6	3.0
0	0
4.6	7.4
7.4	10.4
0	-0.1
12.1	12.1

	IC1	IC2	IC3	IC4	IC5
13	0				
14	1.6				
15	6.4				
16	8.8				
17	1.6				
18	0				
19	1.8				
20	1.2				
21	1.2				
22	2.5				
23	8.0				
24	12.1				

	B	C	E
Q2	7.4	12.1	6.8
3	0	0	0
5	0.1	1.0	0
6	-0.1	8.5	0
8	11.9	3.8	12.1
9	3.1	3.6	3.8
10	2.8	3.5	3.6
11	0.6	0	0
13	12.1	5.4	12.6
14	4.6	5.0	5.3
16	12.2	8.7	12.1

	Q1	Q4	Q7	Q12	Q15	Q17
Pin 1	0	4.6	10.1	8.3	5.9	3.5
2	0	0	9.3	8.3	6.4	0
3	0	0	10.1	8.3	5.9	0.7
4	12.1	4.8	12.1	12.1	12.1	4.1
5	12.0	0	0	0	0	6.8
6	7.4					

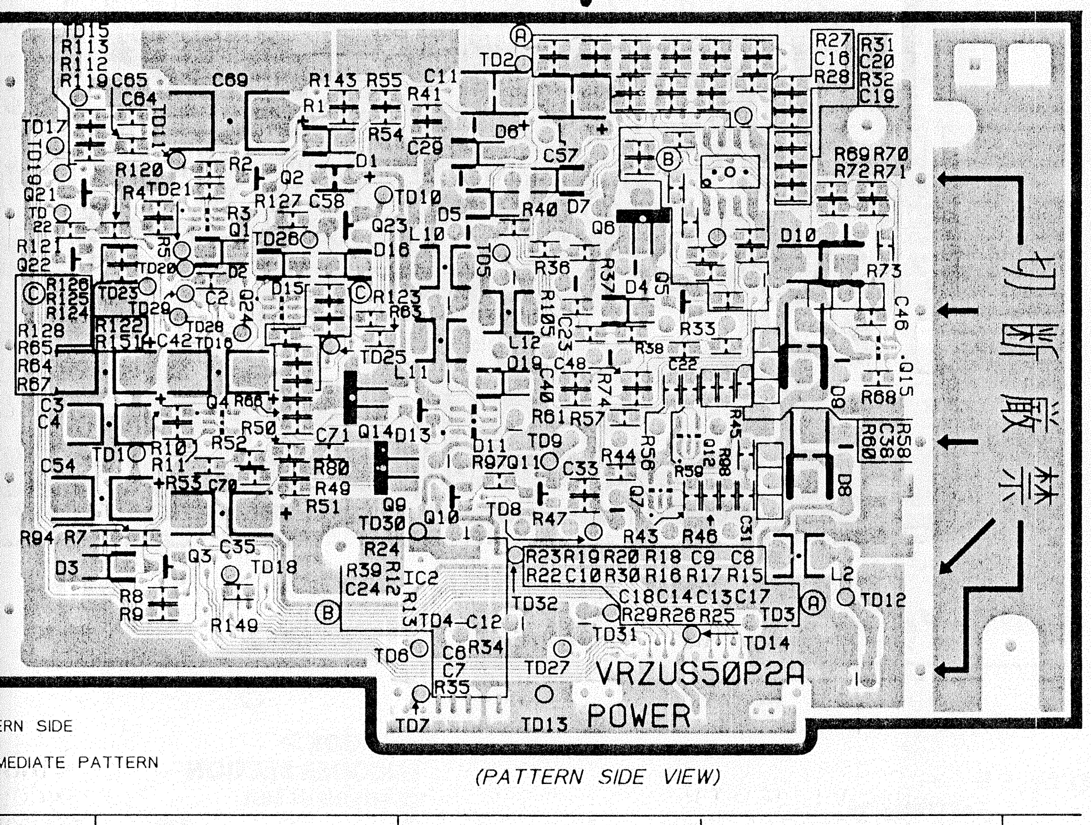
<Index>

FRONT BOARD

IC1	C2
IC2	D4
Q1	C2
Q2	C3
Q3	C3
Q4	C3
Q5	C4
Q6	C4
Q7	C4
Q8	C4
Q9	C5
Q10	C5
Q11	C5
Q12	C5
Q13	B1
D1	B1
D2	A2

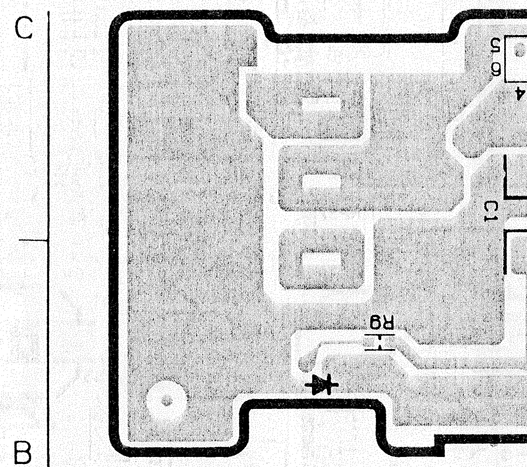
WER BOARD

BOARD

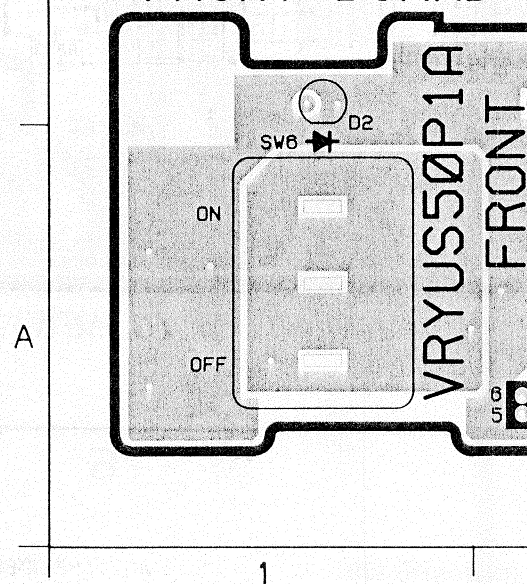

VRZUS50P2A
POWER
切断厳禁
TD15
R113
R112
C69
C11
C57
D10
C46
Q15
R73
D8
D9
Q6
D4
Q5
Q2
Q1
IC2
Q3
D3
R149
TD12
2
3
4
RN SIDE
MEDIATE PATTERN

(PATTERN SIDE VIEW)

FRONT BOARD



FRONT BOARD


SW6
D2
ON
OFF
VRYUS50P1A
FRONT
A
1

<Index>

FRONT BOARD

COMPONENT SIDE

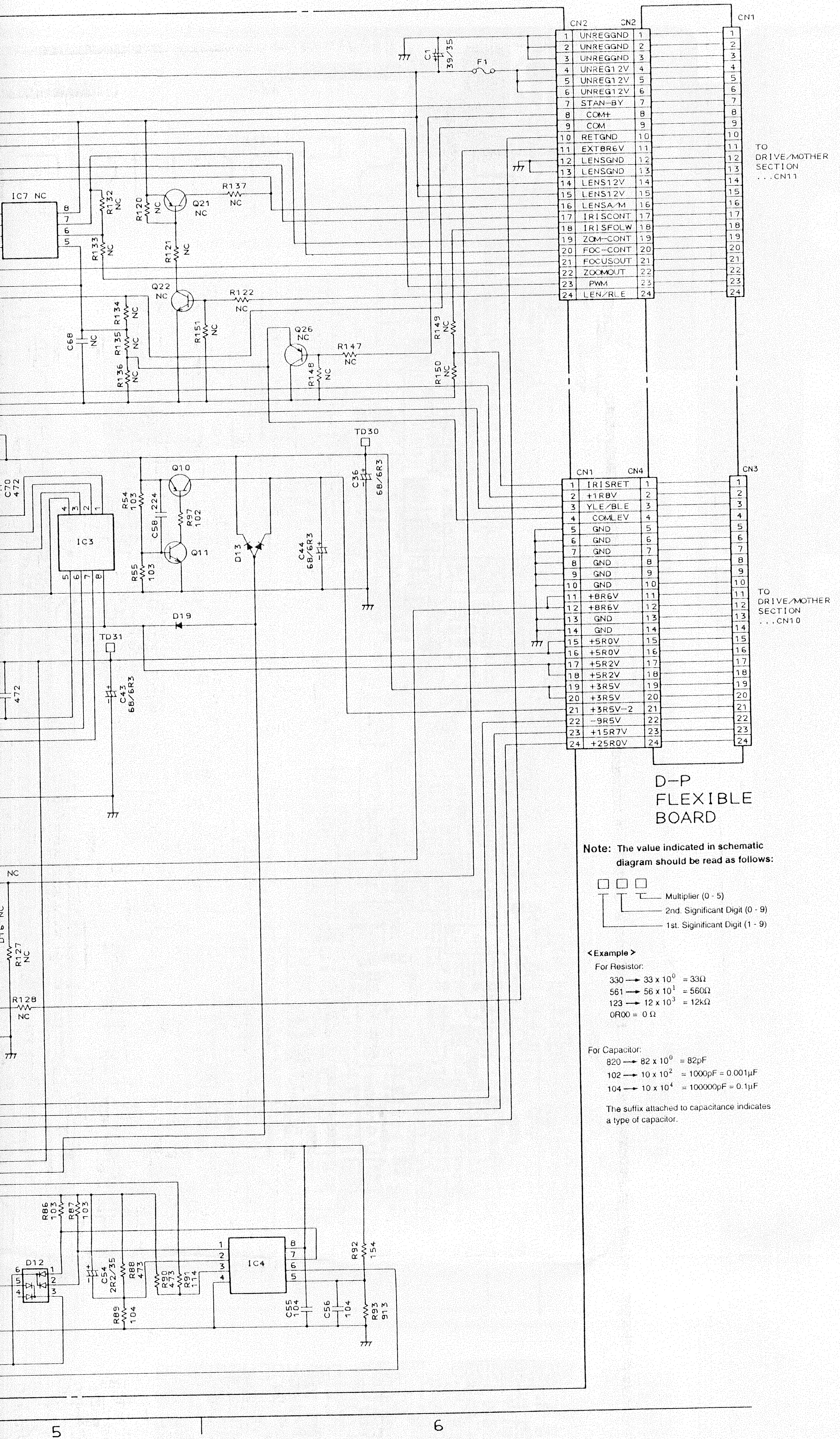
D1	B3
D2	B1

PATTER

IC1
IC2
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8

R BOARD

SC



CN2
CN2
CN1
1 UNREGGND
2 UNREGGND
3 UNREGGND
4 UNREG12V
5 UNREG12V
6 UNREG12V
7 STAN-BY
8 COM+
9 COM
10 RETGND
11 EXT8R6V
12 LENSGND
13 LENSGND
14 LENS12V
15 LENS12V
16 LENSA/M
17 IRISCONT
18 IRISFOLW
19 ZOM-CONT
20 FOC-CONT
21 FOCUSOUT
22 ZOOMOUT
23 PWM
24 LEN/RLE
TO DRIVE/MOTHER SECTION ...CN11
C1 39/35
F1
IC7 NC
R132 NC
R120 NC
Q21 NC
R137 NC
R133 NC
R121 NC
Q22 NC
R122 NC
R134 NC
R135 NC
R136 NC
C68 NC
R151 NC
Q26 NC
R147 NC
R148 NC
R149 NC
R150 NC
TD30
C36 68/6R3
CN1
CN4
CN3
1 IRISRET
2 +18V
3 YLE/BLE
4 COMLEV
5 GND
6 GND
7 GND
8 GND
9 GND
10 GND
11 +8R6V
12 +8R6V
13 GND
14 GND
15 +5R0V
16 +5R0V
17 +5R2V
18 +5R2V
19 +3R5V
20 +3R5V
21 +3R5V-2
22 -9R5V
23 +15R7V
24 +25R0V
TO DRIVE/MOTHER SECTION ...CN10
D-P FLEXIBLE BOARD
C70 472
Q10
R54 153
C58 224
R97 102
IC3
Q11
R55 103
D13
C44 68/6R3
D19
TD31
C43 68/6R3
472
NC
D18 NC
R127 NC
R128 NC
R86 103
R87 103
D12
C54 2R2/35
R88 473
R90 293
R91 114
IC4
R92 154
R89 104
C55 104
C56 104
R93 913
5
6

Note: The value indicated in schematic diagram should be read as follows:

□ □ □
Multiplier (0 - 5)
2nd. Significant Digit (0 - 9)
1st. Siginificant Digit (1 - 9)

<Example>

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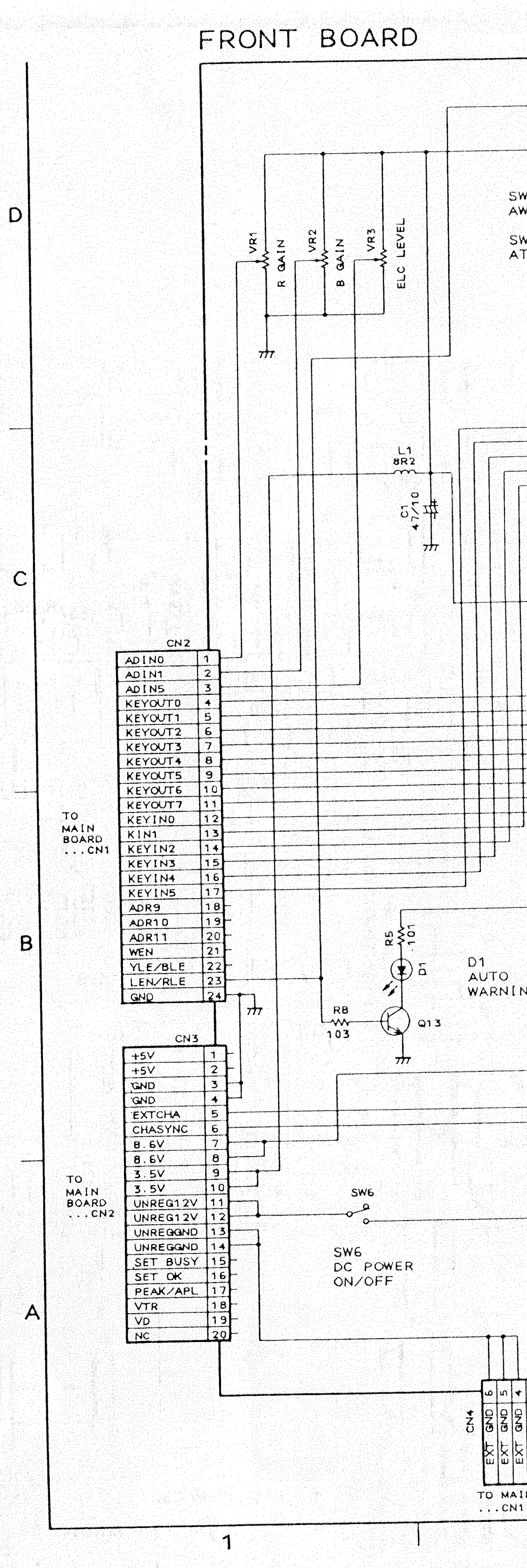
102 → 10 x 10^2 = 1000pF = 0.001μF
104 → 10 x 10^4 = 100000pF = 0.1μF

The suffix attached to capacitance indicates a type of capacitor.



FRONT BOARD
D
C
B
A
1
VR1 R GAIN
VR2 B GAIN
VR3 ELC LEVEL
SW
AW
SW
AT
L1 8R2
C1 4.7/10
CN2
ADIN0
ADIN1
ADIN5
KEYOUT0
KEYOUT1
KEYOUT2
KEYOUT3
KEYOUT4
KEYOUT5
KEYOUT6
KEYOUT7
KEYIN0
KIN1
KEYIN2
KEYIN3
KEYIN4
KEYIN5
ADR9
ADR10
ADR11
WEN
YLE/BLE
LEN/RLE
GND
TO MAIN BOARD ...CN1
R5 101
D1
D1 AUTO WARNIN
R8 103
Q13
CN3
+5V
+5V
GND
GND
EXTCHA
CHASYNC
8.6V
8.6V
3.5V
3.5V
UNREG12V
UNREG12V
UNREGGND
UNREGGND
SET BUSY
SET OK
PEAK/APL
VTR
VD
NC
TO MAIN BOARD ...CN2
SW6
SW6 DC POWER ON/OFF
CN4
EXT GND
TO MAI ...CN1

<Index>

FRONT BOARD

IC1	C2
IC2	D4
Q1	C2
Q2	C3
Q3	C3
Q4	C3
Q5	C4
Q6	C4
Q7	C4
Q8	C4
Q9	C5
Q10	C5
Q11	C5
Q12	C5
Q13	B1
D1	B1
D2	A2

IC5
11.7
3.0
3.0
0
7.4
10.4
-0.1
12.1

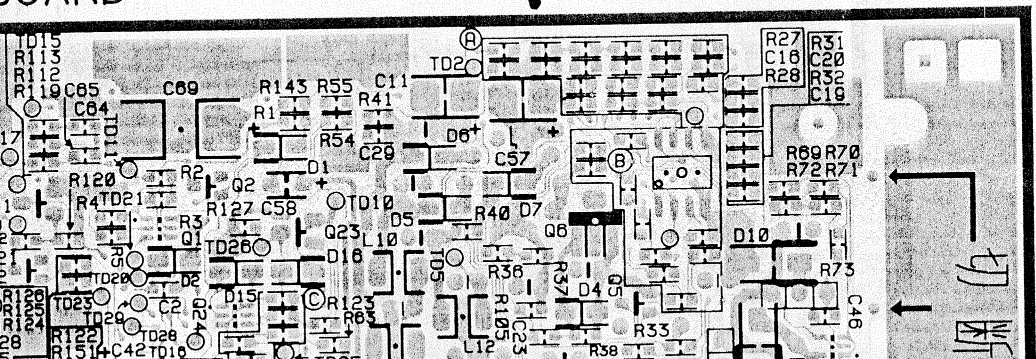
	IC1	IC2	IC3	IC4	IC5
13	0				
14	1.6				
15	6.4				
16	8.8				
17	1.6				
18	0				
19	1.8				
20	1.2				
21	1.2				
22	2.5				
23	8.0				
24	12.1				

	B	C	E
Q2	7.4	12.1	6.8
3	0	0	0
5	0.1	1.0	0
6	-0.1	8.5	0
8	11.9	3.8	12.1
9	3.1	3.6	3.8
10	2.8	3.5	3.6
11	0.6	0	0
13	12.1	5.4	12.6
14	4.6	5.0	5.3
16	12.2	8.7	12.1

	Q1	Q4	Q7	Q12	Q15	Q17
Pin 1	0	4.6	10.1	8.3	5.9	3.5
2	0	0	9.3	8.3	6.4	0
3	0	0	10.1	8.3	5.9	0.7
4	12.1	4.8	12.1	12.1	12.1	4.1
5	12.0	0	0	0	0	6.8
6	7.4					

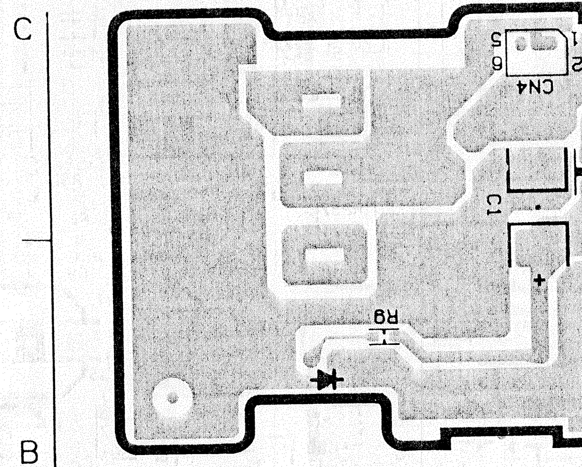
ER BOARD

BOARD

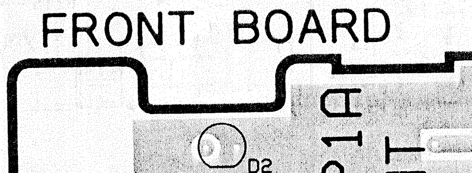


TD15
R113
R112
R119
C65
C64
C69
R143
R55
C11
R1
R41
TD2
R54
C29
D6
C57
R27
C18
R28
R31
C20
R32
C19
R69
R70
R72
R71
R120
R4
TD21
R2
Q2
R127
C58
TD10
Q23
L10
D5
R40
D7
Q6
R3
Q1
TD26
D18
D10
R73
C46
TD20
TD23
C2
D15
R123
R63
R36
R37
R105
C23
D4
R33
R38
R126
R125
R124
R122
R151
C42
TD18
TD28
L12

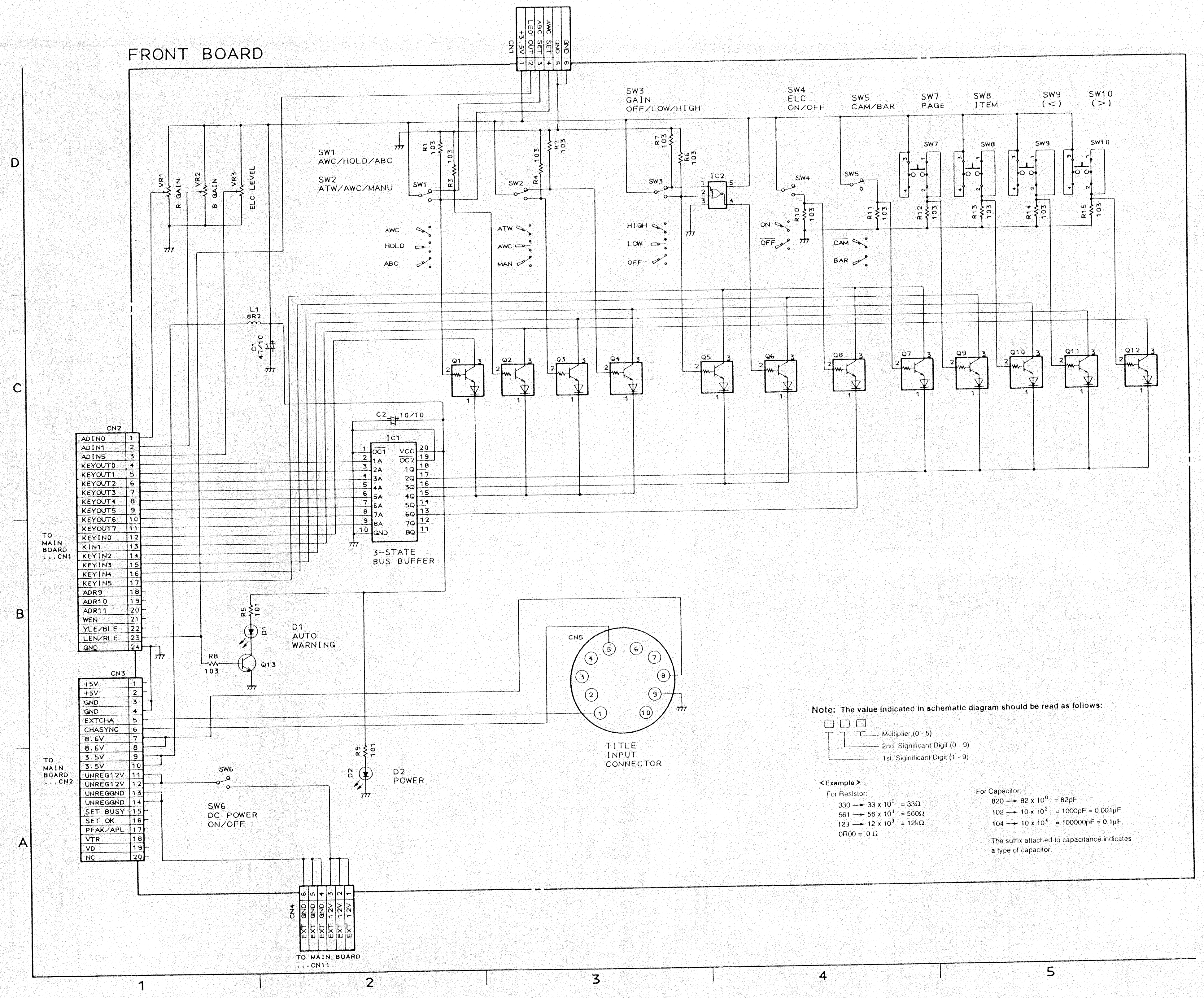
FRONT BOARD



FRONT BOARD



SCHEMATIC DIAGRAM OF FRONT BOARD


FRONT BOARD
CN1
+5.5V
LED OUT
ABC SET
AWC SET
GND
SW1 AWC/HOLD/ABC
SW2 ATW/AWC/MANU
SW3 GAIN OFF/LOW/HIGH
SW4 ELC ON/OFF
SW5 CAM/BAR
SW7 PAGE
SW8 ITEM
SW9 (<)
SW10 (>)
VR1 R GAIN
VR2 B GAIN
VR3 ELC LEVEL
AWC
HOLD
ABC
ATW
AWC
MAN
HIGH
LOW
OFF
ON
OFF
CAM
BAR
IC2
L1 8R2
C1 47/10
Q1
Q2
Q3
Q4
Q5
Q6
Q8
Q7
Q9
Q10
Q11
Q12
C2 10/10
IC1
3-STATE BUS BUFFER
CN2
ADIN0
ADIN1
ADIN5
KEYOUT0
KEYOUT1
KEYOUT2
KEYOUT3
KEYOUT4
KEYOUT5
KEYOUT6
KEYOUT7
KEYIN0
KIN1
KEYIN2
KEYIN3
KEYIN4
KEYIN5
ADR9
ADR10
ADR11
WEN
YLE/BLE
LEN/RLE
GND
TO MAIN BOARD ...CN1
R5 101
D1 AUTO WARNING
R8 103
Q13
CN3
+5V
+5V
GND
GND
EXTCHA
CHASYNC
8.6V
8.6V
3.5V
3.5V
UNREG12V
UNREG12V
UNREGGND
UNREGGND
SET BUSY
SET OK
PEAK/APL
VTR
VD
NC
TO MAIN BOARD ...CN2
SW6 DC POWER ON/OFF
R9 101
D2 POWER
CN5
TITLE INPUT CONNECTOR
CN4
EXT GND
EXT GND
EXT GND
EXT 12V
EXT 12V
EXT 12V
TO MAIN BOARD ...CN11
A
B
C
D
1
2
3
4
5

Note: The value indicated in schematic diagram should be read as follows:

☐ ☐ ☐
- Multiplier (0 - 5)
- 2nd. Significant Digit (0 - 9)
- 1st. Siginificant Digit (1 - 9)

<Example>

For Resistor:
330 → 33 x 10^0 = 33Ω
561 → 56 x 10^1 = 560Ω
123 → 12 x 10^3 = 12kΩ
0R00 = 0 Ω

For Capacitor:
820 → 82 x 10^0 = 82pF
102 → 10 x 10^2 = 1000pF = 0.001μF
104 → 10 x 10^4 = 100000pF = 0.1μF

The suffix attached to capacitance indicates a type of capacitor.

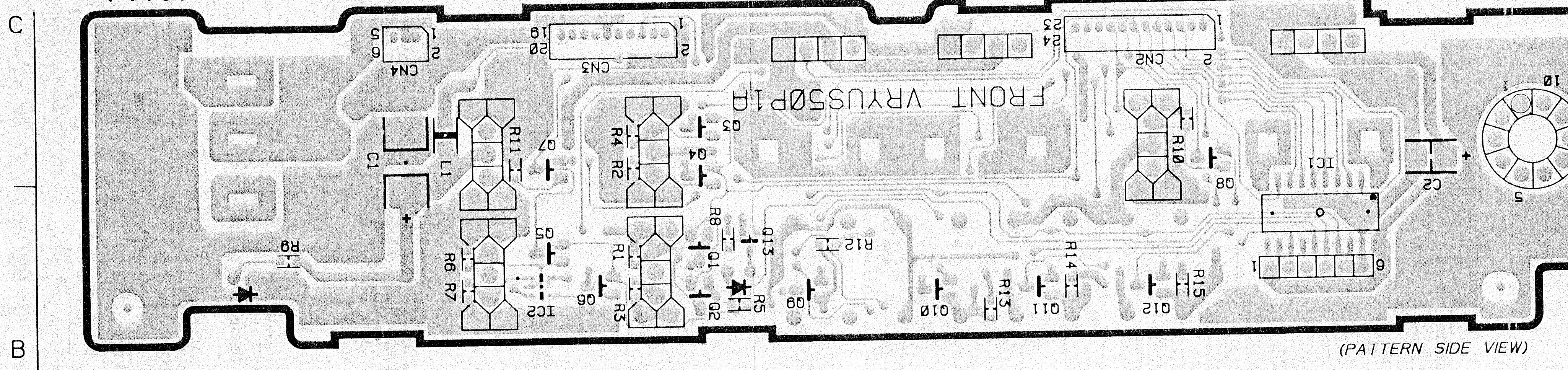
<Index>

FRONT BOARD

IC1	C2
IC2	D4
Q1	C2
Q2	C3
Q3	C3
Q4	C3
Q5	C4
Q6	C4
Q7	C4
Q8	C4
Q9	C5
Q10	C5
Q11	C5
Q12	C5
Q13	B1
D1	B1
D2	A2

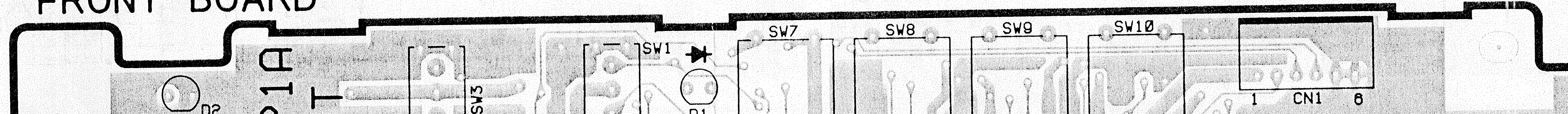
CONDUCTOR VIEW OF FRONT BOARD

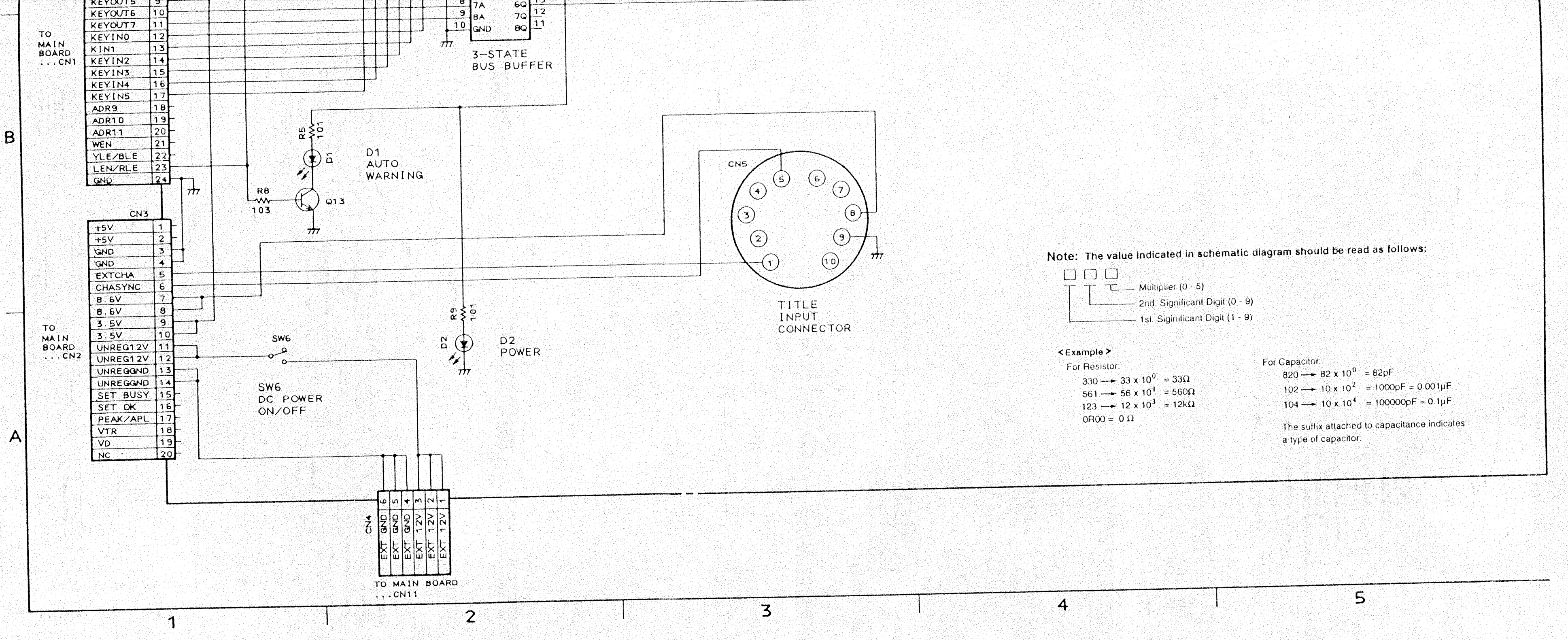
FRONT BOARD


C
B
CN4
CN3
CN2
FRONT VRYUS50P1A
IC1
IC2
C1
C2
L1
R1
R2
R3
R4
R5
R6 R7
R8
R9
R10
R11
R12
R13
R14
R15
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13

(PATTERN SIDE VIEW)

FRONT BOARD


SW1
SW3
SW7
SW8
SW9
SW10
D1
D2
CN1
1
8


KEYOUT5 9
KEYOUT6 10
KEYOUT7 11
KEYIN0 12
KIN1 13
KEYIN2 14
KEYIN3 15
KEYIN4 16
KEYIN5 17
ADR9 18
ADR10 19
ADR11 20
WEN 21
YLE/BLE 22
LEN/RLE 23
GND 24
TO MAIN BOARD ...CN1
7A 6Q
8A 7Q
GND 8Q
3-STATE BUS BUFFER
R5 101
D1
D1 AUTO WARNING
R8 103
Q13
CN3
+5V 1
+5V 2
GND 3
GND 4
EXTCHA 5
CHASYNC 6
8.6V 7
8.6V 8
3.5V 9
3.5V 10
UNREG12V 11
UNREG12V 12
UNREGGND 13
UNREGGND 14
SET BUSY 15
SET OK 16
PEAK/APL 17
VTR 18
VD 19
NC 20
TO MAIN BOARD ...CN2
SW6
SW6 DC POWER ON/OFF
R9 101
D2
D2 POWER
CN4
EXT GND 6
EXT GND 5
EXT GND 4
EXT 12V 3
EXT 12V 2
EXT 12V 1
TO MAIN BOARD ...CN11
CN5
TITLE INPUT CONNECTOR
A
B
1
2
3
4
5

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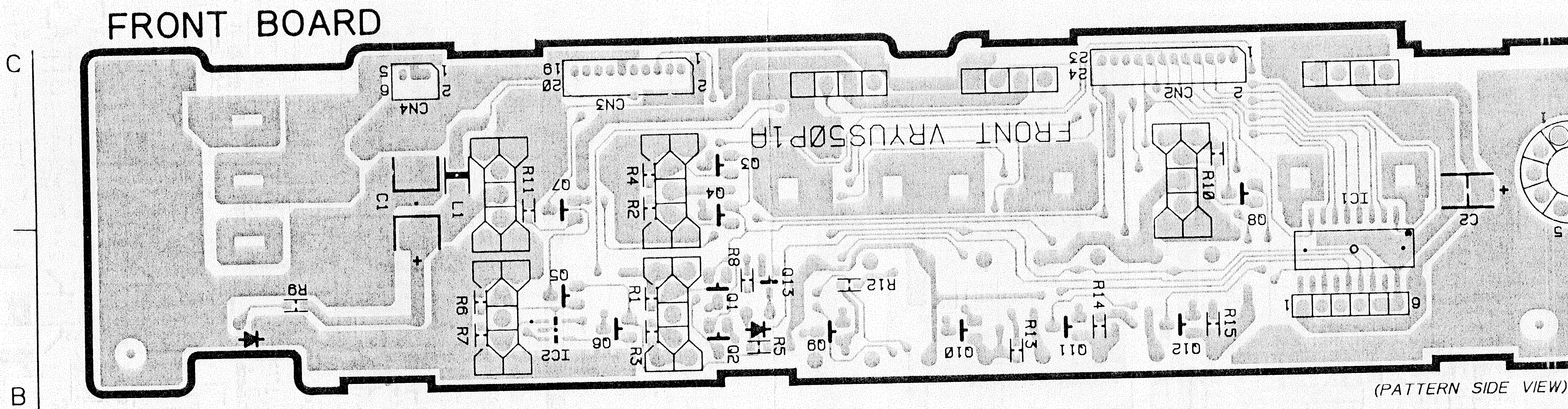
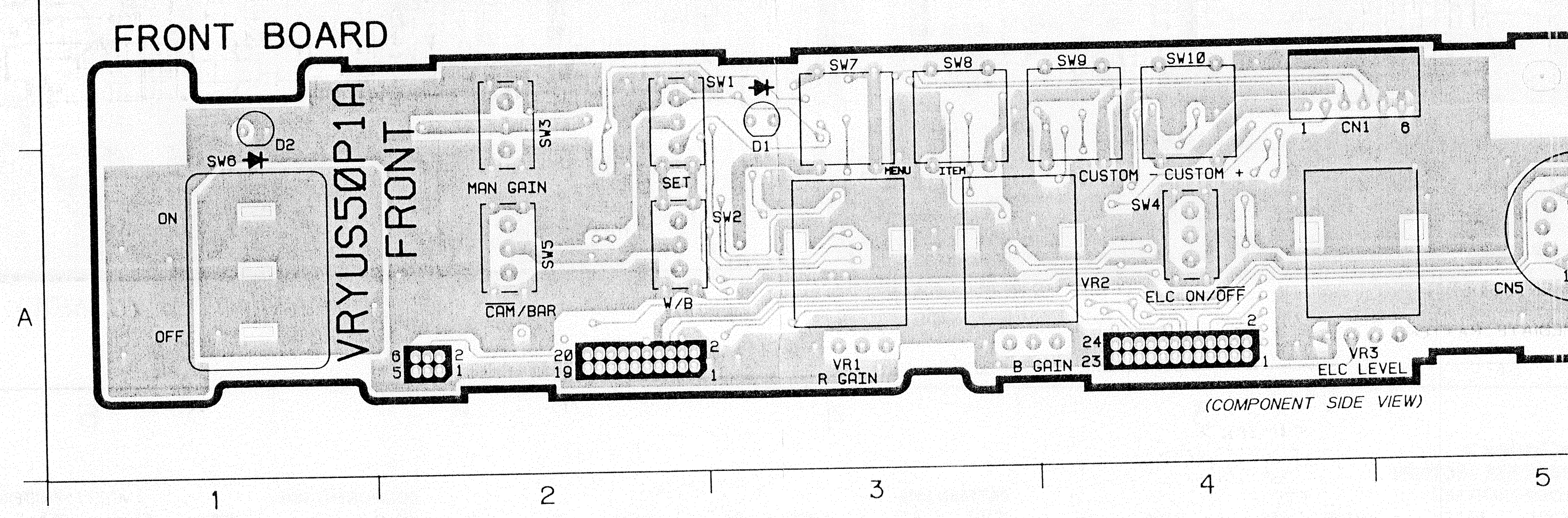
<Index>

FRONT BOARD

IC1	C2
IC2	D4
Q1	C2
Q2	C3
Q3	C3
Q4	C3
Q5	C4
Q6	C4
Q7	C4
Q8	C4
Q9	C5
Q10	C5
Q11	C5
Q12	C5
Q13	B1
D1	B1
D2	A2

CONDUCTOR VIEW OF FRONT BOARD


FRONT BOARD
C
B
CN4
CN3
CN2
FRONT VRYUS50P1A
IC1
IC2
C1
C2
L1
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
(PATTERN SIDE VIEW)


FRONT BOARD
A
SW6
D2
ON
OFF
VRYUS50P1A FRONT
SW3
MAN GAIN
SW5
CAM/BAR
SW1
SET
SW2
W/B
D1
SW7
MENU
SW8
ITEM
SW9
SW10
CUSTOM -
CUSTOM +
SW4
ELC ON/OFF
VR2
VR1 R GAIN
B GAIN
VR3 ELC LEVEL
CN1
CN5
1
2
3
4
5
(COMPONENT SIDE VIEW)

<Index>

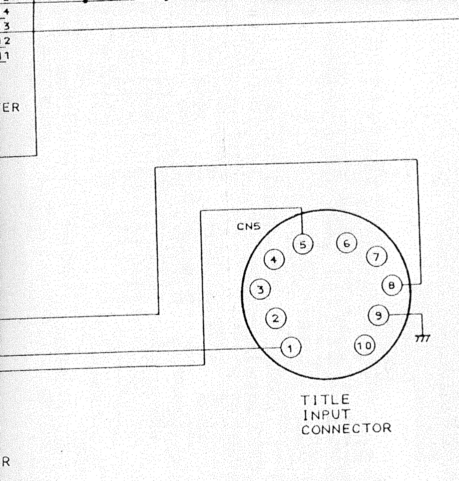
FRONT BOARD

COMPONENT SIDE

D1	B3
D2	B1

PATTERN SIDE

IC1	B4
IC2	B2
Q1	B3
Q2	B3
Q3	C3
Q4	C3
Q5	B2
Q6	B2
Q7	C2
Q8	C4
Q9	B3
Q10	B3
Q11	B4
Q12	B4
Q13	B3


CN5
TITLE
INPUT
CONNECTOR
1
2
3
4
5
6
7
8
9
10

Note: The value indicated in schematic diagram should be read as follows:

□ □ □
Multiplier (0 - 5)
2nd. Significant Digit (0 - 9)
1st. Siginificant Digit (1 - 9)

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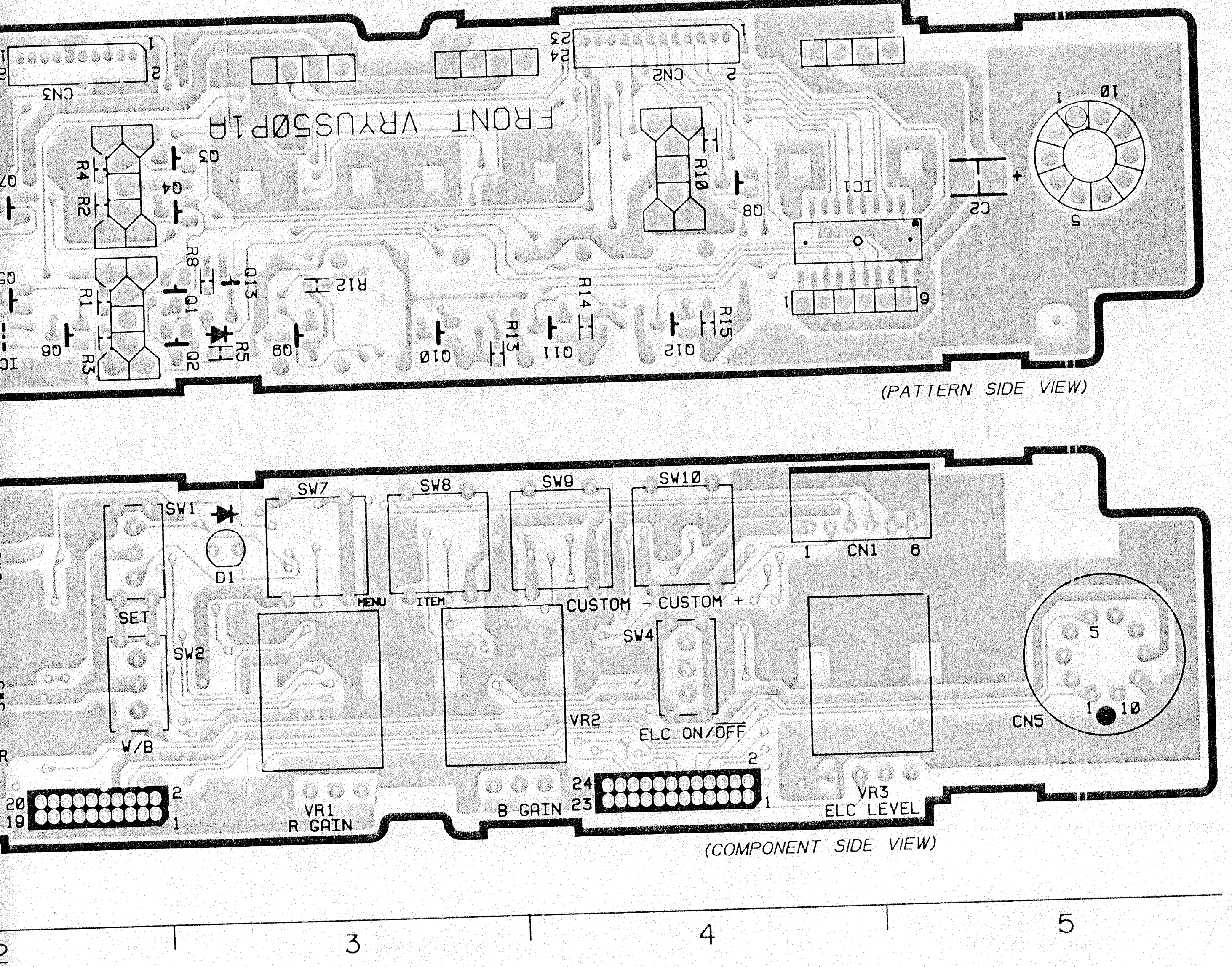
The suffix attached to capacitance indicates a type of capacitor.

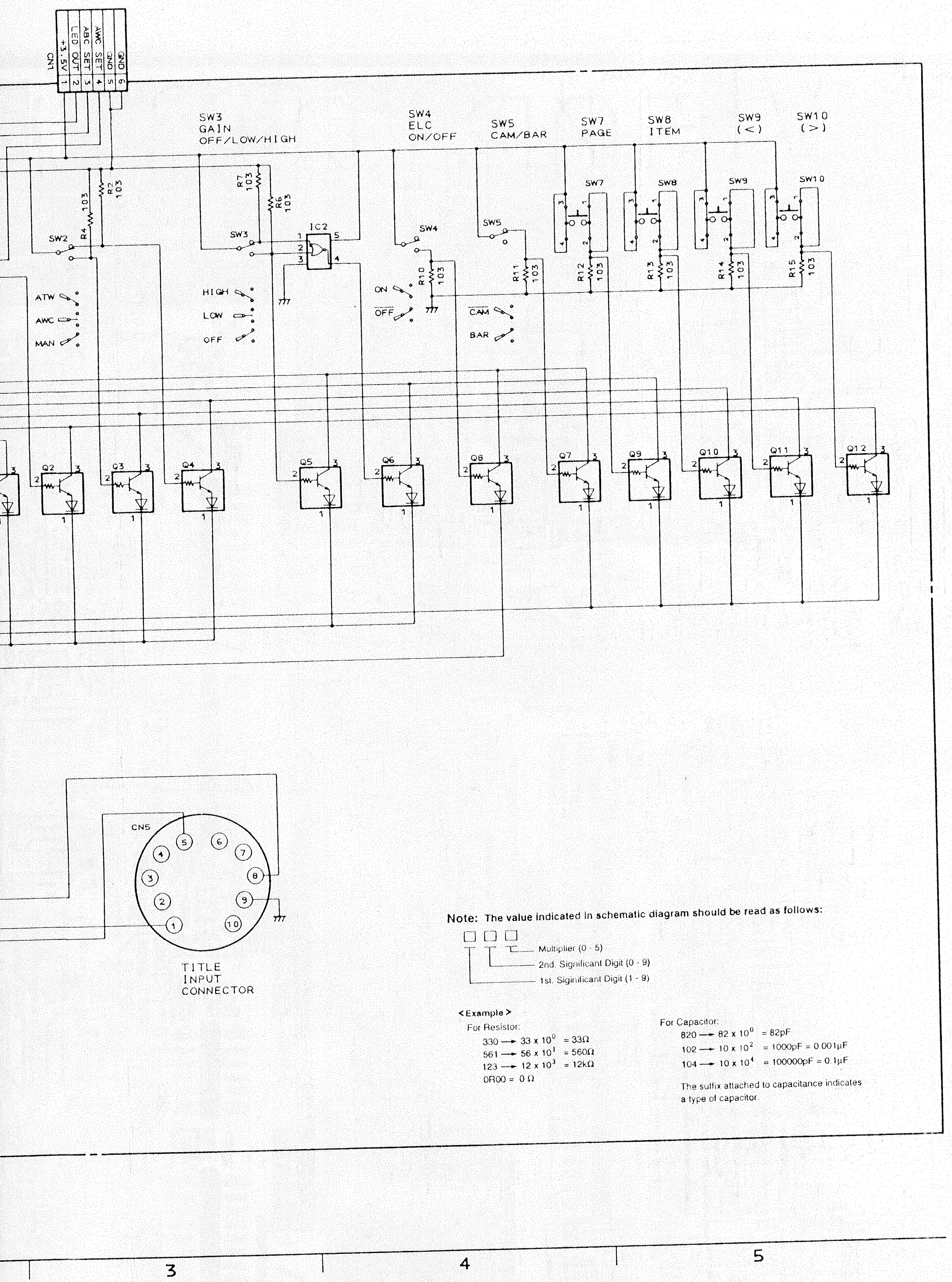
3 4 5

DUCTOR VIEW OF FRONT BOARD


CN3
FRONT VRYUS50P1A
CN2
IC1
C2
R4
R2
Q3
Q4
R8
Q13
R12
R1
Q1
R3
Q6
Q2
R5
Q9
Q10
R13
R14
Q11
Q12
R15
R10
Q8
(PATTERN SIDE VIEW)
SW1
D1
SW7
SW8
SW9
SW10
CN1
MENU
ITEM
CUSTOM - CUSTOM +
SET
SW2
SW4
W/B
VR1
R GAIN
VR2
B GAIN
ELC ON/OFF
VR3
ELC LEVEL
CN5
(COMPONENT SIDE VIEW)
2
3
4
5

Q9	B3
Q10	B3
Q11	B4
Q12	B4
Q13	B3

DIAGRAM OF FRONT BOARD


CN1
+5.5V 1
LED OUT 2
ABC SET 3
AWC SET 4
GND 5
GND 6
SW3 GAIN OFF/LOW/HIGH
SW4 ELC ON/OFF
SW5 CAM/BAR
SW7 PAGE
SW8 ITEM
SW9 (<)
SW10 (>)
SW2
SW3
SW4
SW5
SW7
SW8
SW9
SW10
IC2
R3 103
R4 103
R6 103
R7 103
R10 103
R11 103
R12 103
R13 103
R14 103
R15 103
ATW
AWC
MAN
HIGH
LOW
OFF
ON
OFF
CAM
BAR
Q2
Q3
Q4
Q5
Q6
Q8
Q7
Q9
Q10
Q11
Q12
CN5
TITLE INPUT CONNECTOR
3
4
5

Note: The value indicated in schematic diagram should be read as follows:

□ □ □
Multiplier (0 - 5)
2nd. Significant Digit (0 - 9)
1st. Siginificant Digit (1 - 9)

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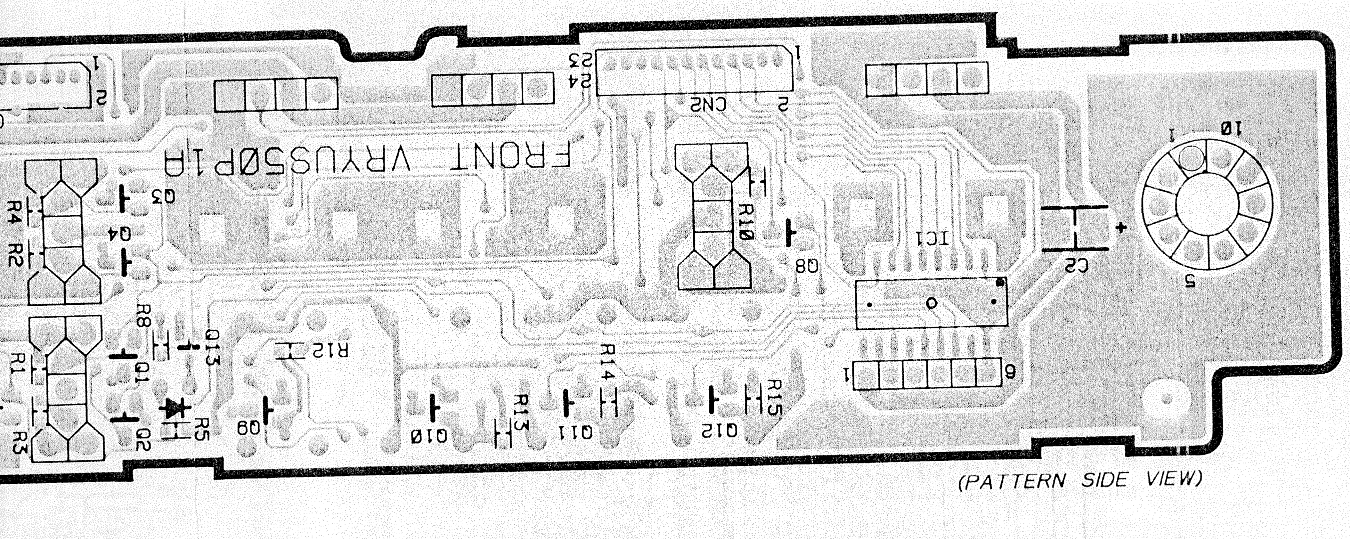
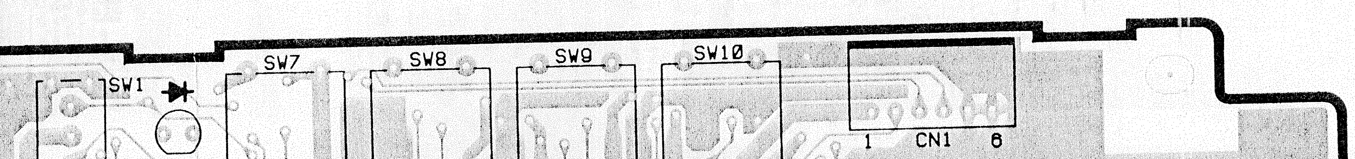
The suffix attached to capacitance indicates a type of capacitor.

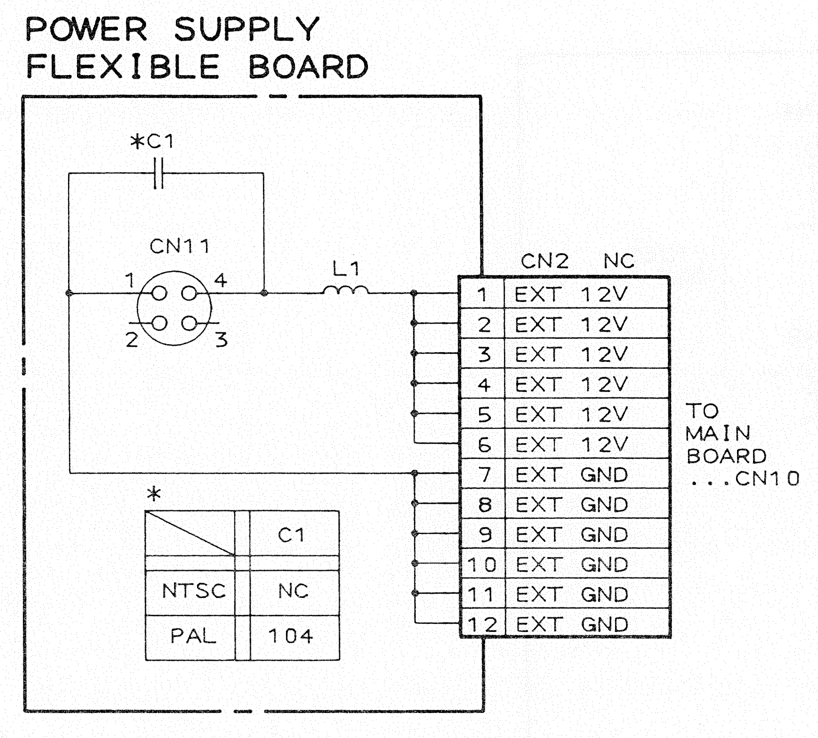
CTOR VIEW OF FRONT BOARD


FRONT VRYUS50P1A
CN2
IC1
C2
R1
R2
R3
R4
R5
R8
R10
R12
R13
R14
R15
Q1
Q2
Q3
Q4
Q8
Q9
Q10
Q11
Q12
Q13
23
24
1
5
10
9

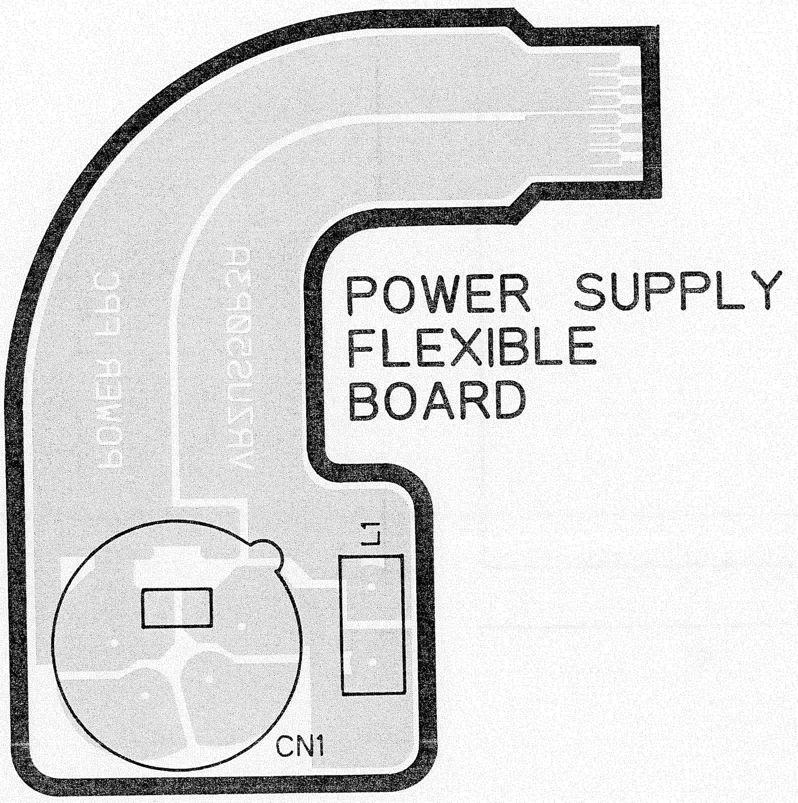
(PATTERN SIDE VIEW)


SW1
SW7
SW8
SW9
SW10
1
CN1
8

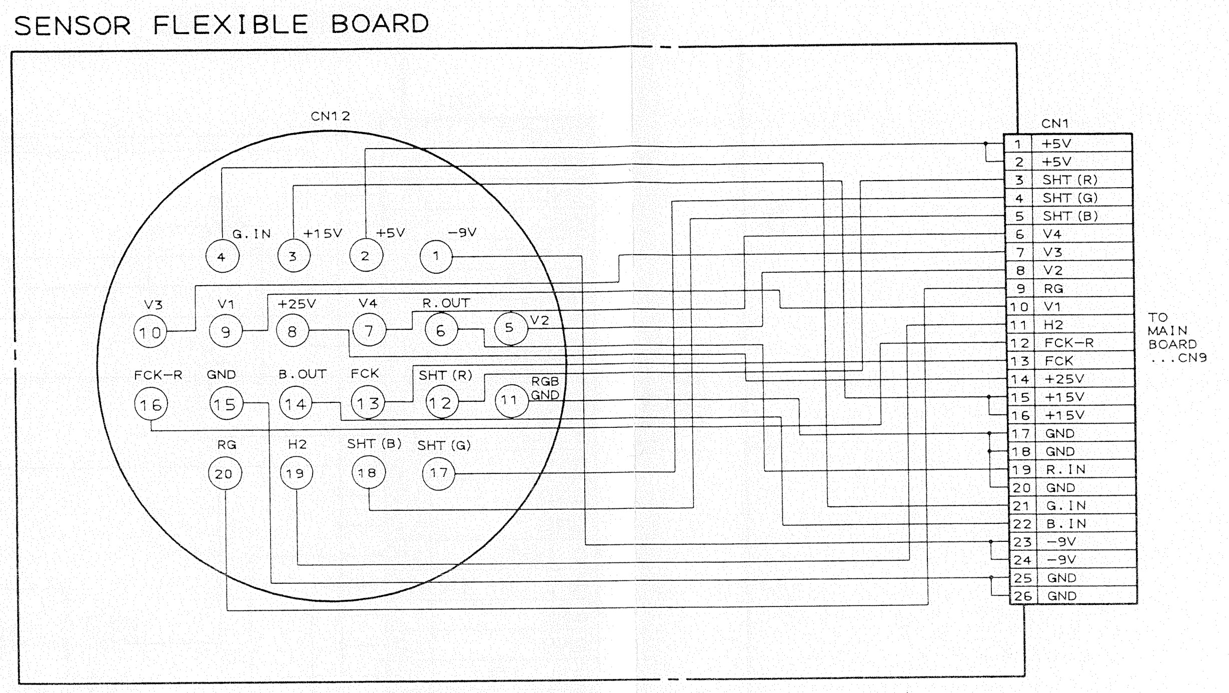
SCHEMATIC DIAGRAM OF POWER SUPPLY FLEXIBLE BOARD


POWER SUPPLY FLEXIBLE BOARD
*C1
CN11
1
4
2
3
L1
CN2 NC
1 EXT 12V
2 EXT 12V
3 EXT 12V
4 EXT 12V
5 EXT 12V
6 EXT 12V
7 EXT GND
8 EXT GND
9 EXT GND
10 EXT GND
11 EXT GND
12 EXT GND
TO MAIN BOARD ...CN10
*
C1
NTSC NC
PAL 104

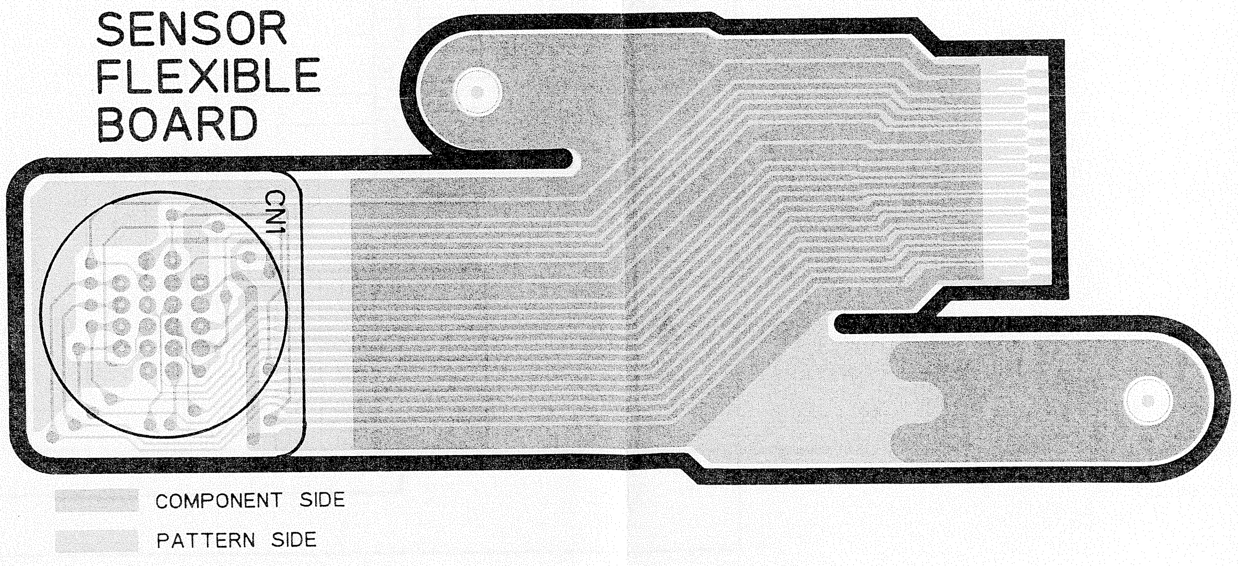
CONDUCTOR VIEW OF POWER SUPPLY FLEXIBLE BOARD


POWER SUPPLY FLEXIBLE BOARD
POWER FPC
L1
CN1

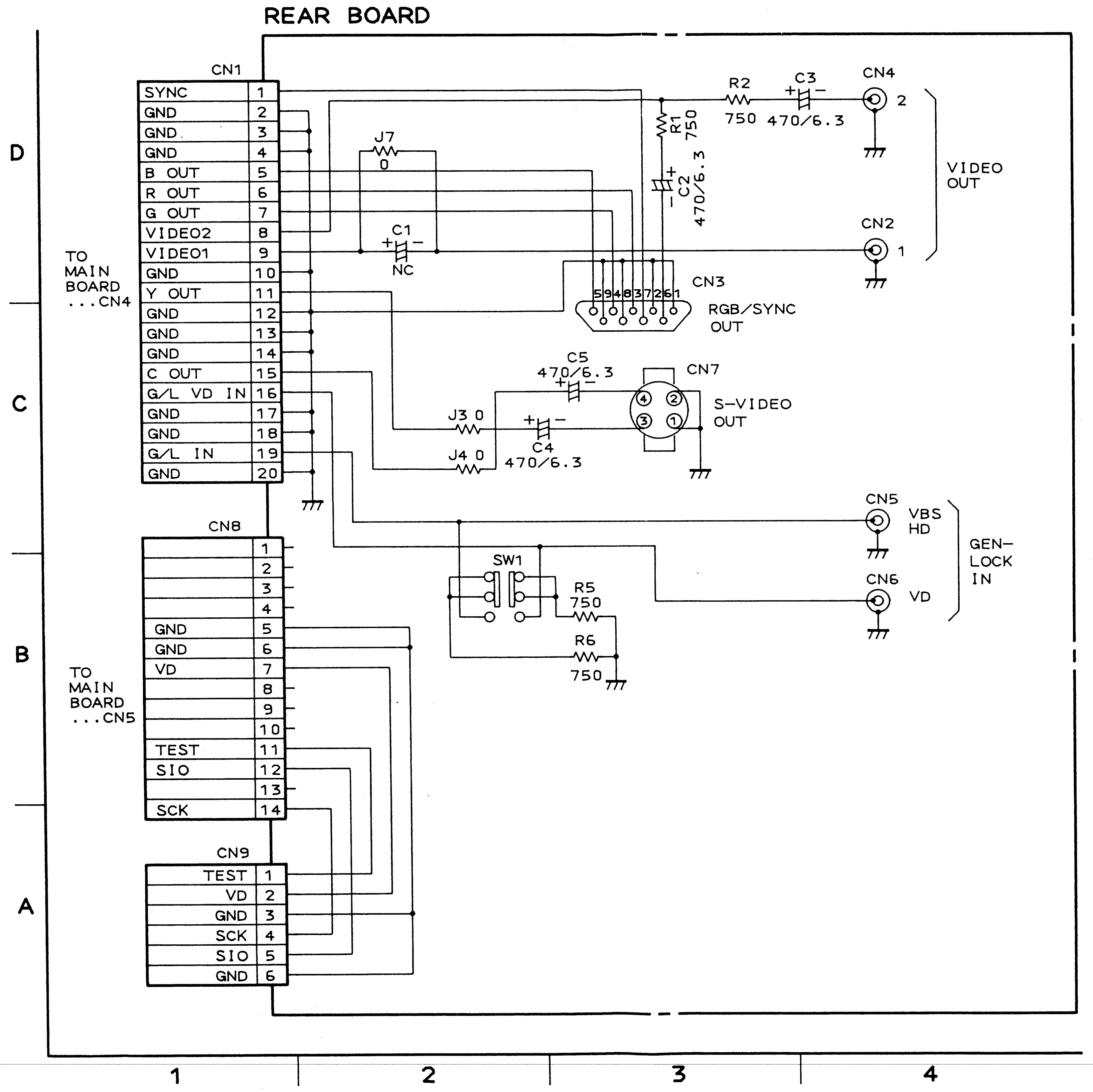
SCHEMATIC DIAGRAM OF SENSOR FLEXIBLE BOARD


SENSOR FLEXIBLE BOARD
CN12
G.IN
+15V
+5V
-9V
4
3
2
1
V3
V1
+25V
V4
R.OUT
10
9
8
7
6
5
V2
FCK-R
GND
B.OUT
FCK
SHT (R)
16
15
14
13
12
11
RGB GND
RG
H2
SHT (B)
SHT (G)
20
19
18
17
CN1
1 +5V
2 +5V
3 SHT (R)
4 SHT (G)
5 SHT (B)
6 V4
7 V3
8 V2
9 RG
10 V1
11 H2
12 FCK-R
13 FCK
14 +25V
15 +15V
16 +15V
17 GND
18 GND
19 R.IN
20 GND
21 G.IN
22 B.IN
23 -9V
24 -9V
25 GND
26 GND
TO MAIN BOARD ...CN9

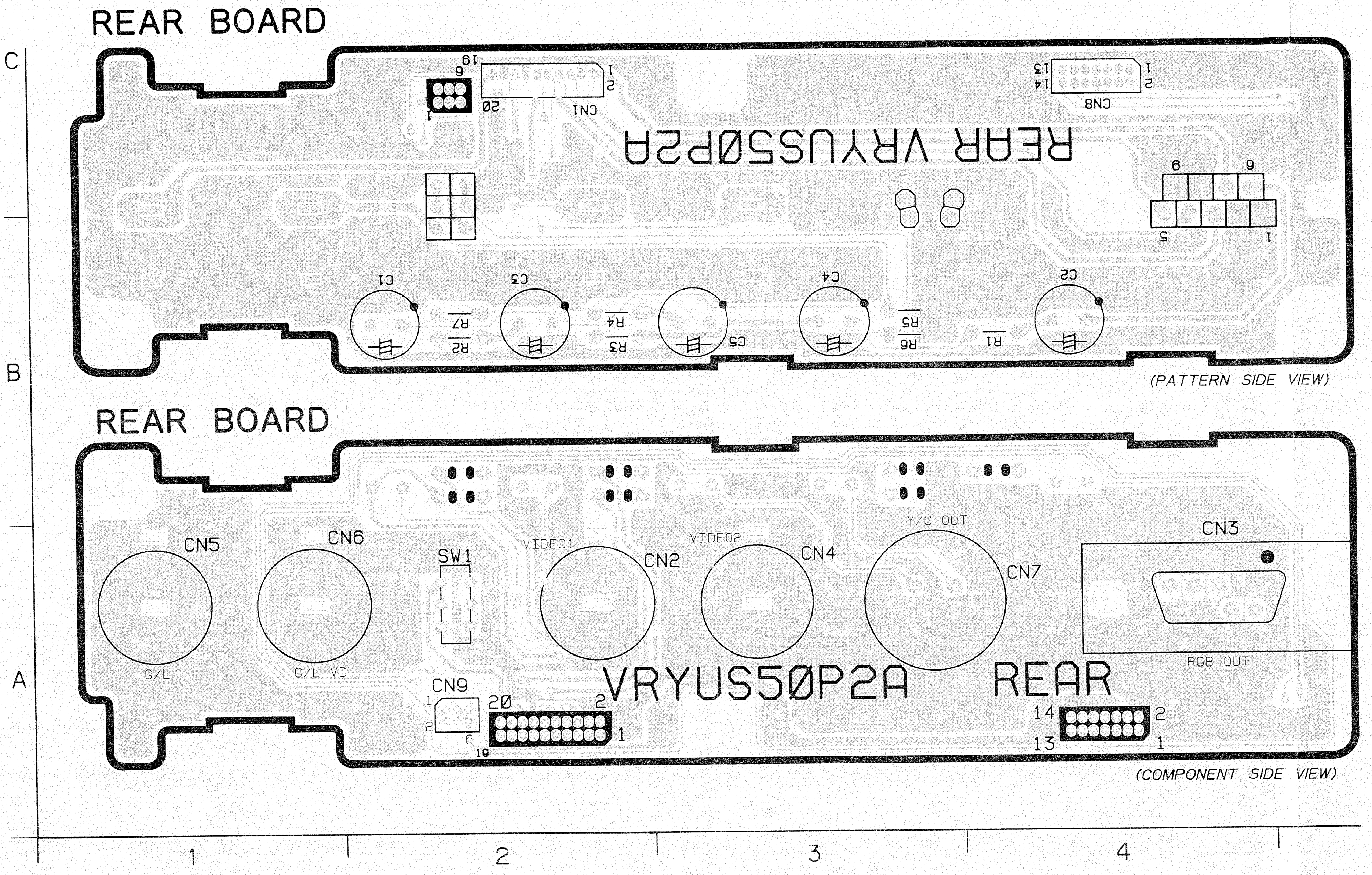
CONDUCTOR VIEW OF SENSOR FLEXIBLE BOARD


SENSOR FLEXIBLE BOARD
CN1
COMPONENT SIDE
PATTERN SIDE

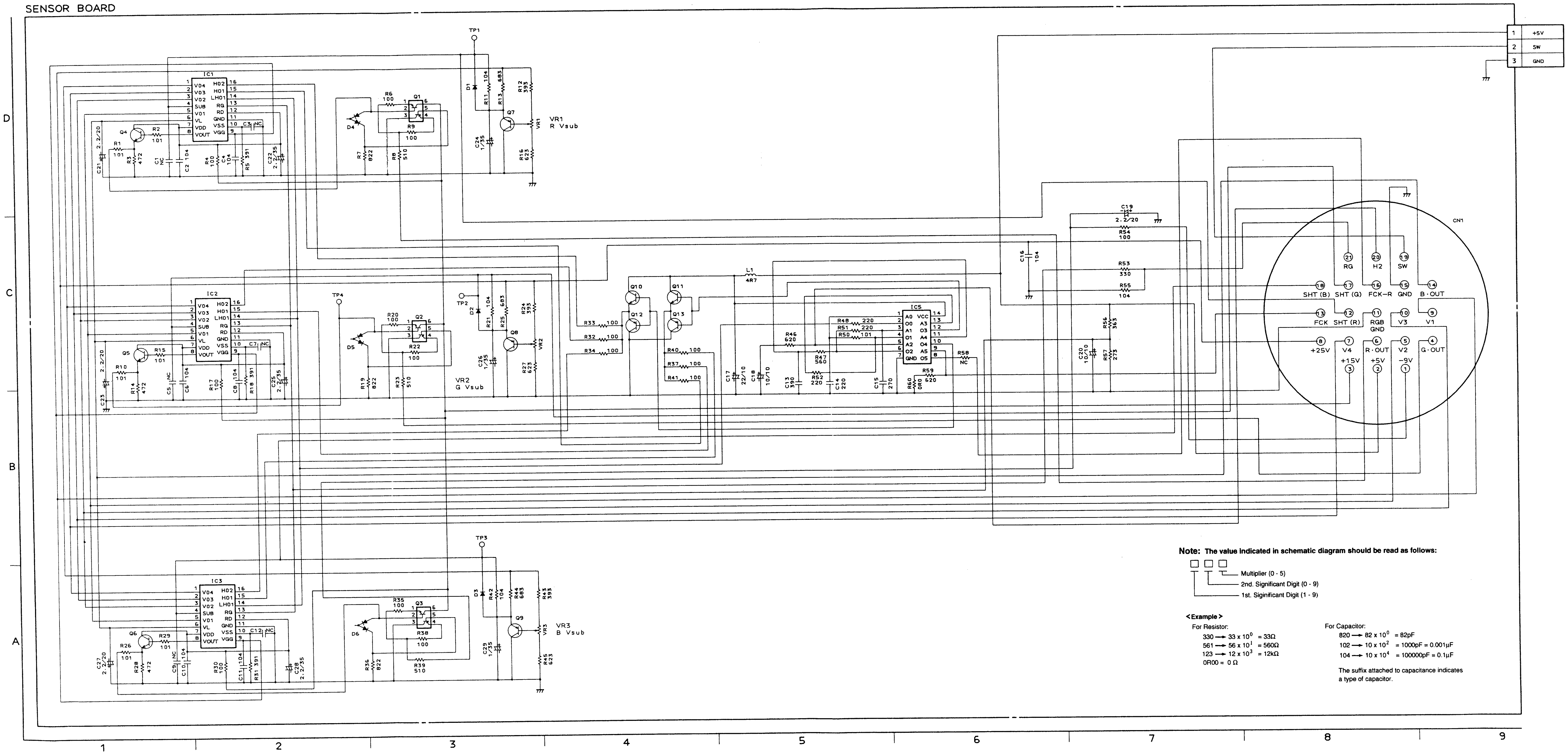
SCHEMATIC DIAGRAM OF REAR BOARD


REAR BOARD
CN1
SYNC 1
GND 2
GND 3
GND 4
B OUT 5
R OUT 6
G OUT 7
VIDEO2 8
VIDEO1 9
GND 10
Y OUT 11
GND 12
GND 13
GND 14
C OUT 15
G/L VD IN 16
GND 17
GND 18
G/L IN 19
GND 20
TO MAIN BOARD ...CN4
J7
0
C1
NC
R2
750
C3
470/6.3
R1
750
C2
470/6.3
CN4
2
VIDEO OUT
CN2
1
CN3
5 9 4 8 3 7 2 6 1
RGB/SYNC OUT
C5
470/6.3
CN7
S-VIDEO OUT
J3 0
J4 0
C4
470/6.3
CN5
VBS HD
CN6
VD
GEN-LOCK IN
SW1
R5
750
R6
750
CN8
GND 5
GND 6
VD 7
TEST 11
SIO 12
SCK 14
TO MAIN BOARD ...CN5
CN9
TEST 1
VD 2
GND 3
SCK 4
SIO 5
GND 6
D
C
B
A
1
2
3
4

CONDUCTOR VIEW OF REAR BOARD


REAR BOARD
C
B
A
1
2
3
4
CN1
CN8
C1
C2
C3
C4
C5
R1
R2
R3
R4
R5
R6
R7
(PATTERN SIDE VIEW)
REAR BOARD
CN5
CN6
SW1
VIDEO1
CN2
VIDEO2
CN4
Y/C OUT
CN7
CN3
RGB OUT
G/L
G/L VD
CN9
VRYUS50P2A
REAR
(COMPONENT SIDE VIEW)

SCHEMATIC DIAGRAM OF SENSOR BOARD


SENSOR BOARD
IC1
IC2
IC3
IC5
VO4
VO3
VO2
SUB
VO1
VL
VDD
VOUT
HO2
HO1
LHO1
RG
RD
GND
VSS
VGG
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
Q13
D1
D2
D3
D4
D5
D6
TP1
TP2
TP3
TP4
VR1
R Vsub
VR2
G Vsub
VR3
B Vsub
L1
4R7
CN1
+5V
SW
GND
RG
H2
SHT (B)
SHT (G)
FCK-R
B-OUT
FCK
SHT (R)
RGB GND
V3
V1
+25V
V4
R-OUT
V2
G-OUT
+15V
-9V
A
B
C
D
1
2
3
4
5
6
7
8
9

Note: The value indicated in schematic diagram should be read as follows:

□ □ □
- Multiplier (0 - 5)
- 2nd. Significant Digit (0 - 9)
- 1st. Siginificant Digit (1 - 9)

<Example>

For Resistor:

330 → 33 x 10^0 = 33Ω
561 → 56 x 10^1 = 560Ω
123 → 12 x 10^3 = 12kΩ
0R00 = 0 Ω

For Capacitor:

820 → 82 x 10^0 = 82pF
102 → 10 x 10^2 = 1000pF = 0.001μF
104 → 10 x 10^4 = 100000pF = 0.1μF

The suffix attached to capacitance indicates a type of capacitor.

<Index>

SENSOR BOARD

IC5	C6
Q1	D3
Q2	C3
Q3	A3
Q4	D1
Q5	C1
Q6	A1
Q7	D3
Q8	C3
Q9	A3
Q10	C4
Q11	C4
Q12	C4
Q13	C4
D1	D3
D2	C3
D3	A3
D4	D2
D5	C2
D6	A2

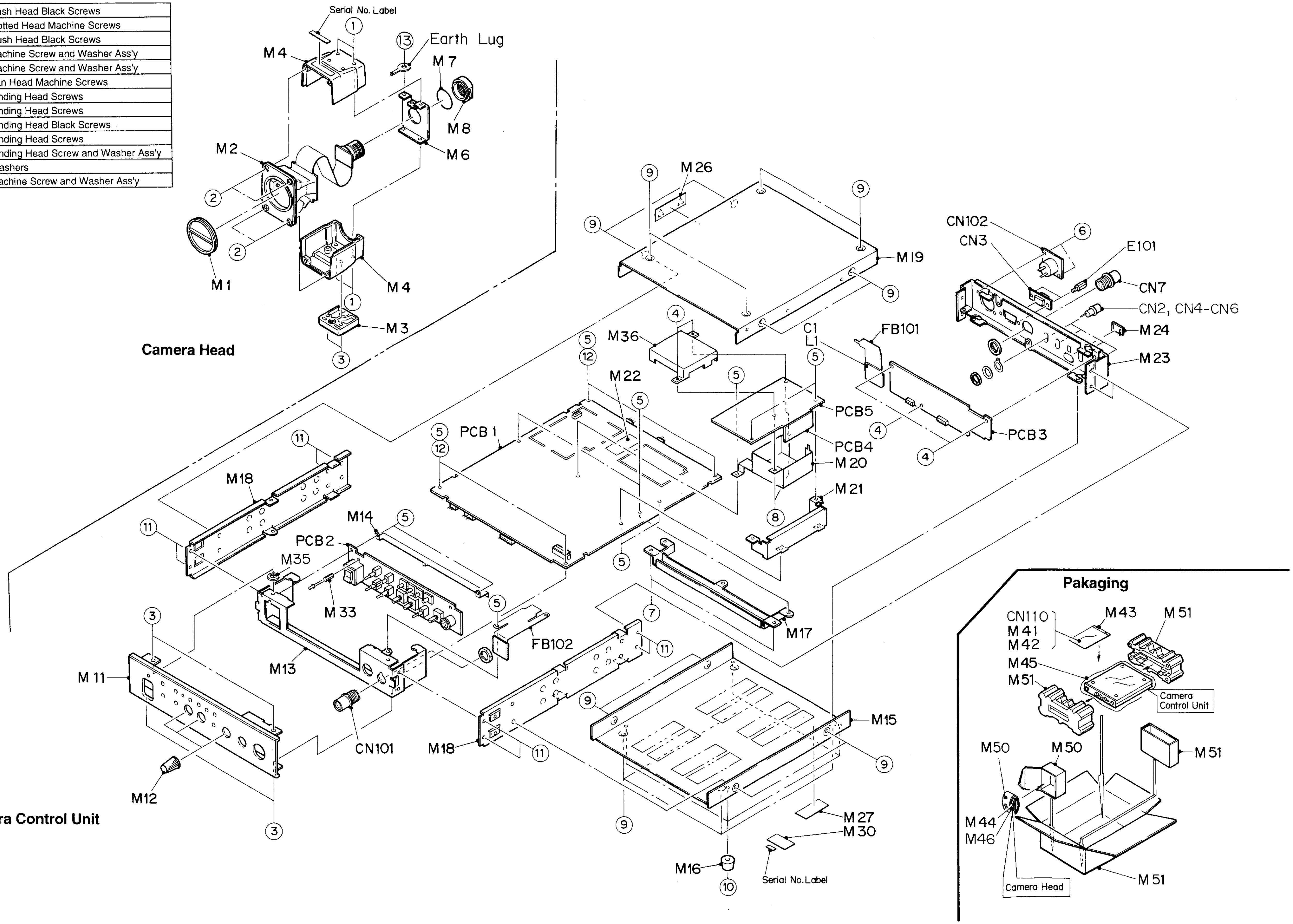
Note:

All parts mounted on the Sensor Board are not supply individually.
Please order as the Head Optical Ass'y, part number YWVAKA1152AN.

EXPLODED VIEW

○ Numbers show screws, washers and nuts, etc.

⑴	XSS26+5FXK	Flush Head Black Screws
⑵	XQG26+A6FXK	Slotted Head Machine Screws
⑶	XSS26+10FXK	Flush Head Black Screws
⑷	XYN26+J6FX	Machine Screw and Washer Ass'y
⑸	XYN3+J6FX	Machine Screw and Washer Ass'y
⑹	XSN26+6FX	Pan Head Machine Screws
⑺	XSB3+6FX	Binding Head Screws
⑻	XSB26+6FX	Binding Head Screws
⑼	XSB3+6FXK	Binding Head Black Screws
⑽	XSB3+12FXK	Binding Head Screws
⑾	XYM3+E6FX	Binding Head Screw and Washer Ass'y
⑿	YWE3D10BN	Washers
⒀	XYN26+C5FX	Machine Screw and Washer Ass'y


Serial No. Label
①
⑬ Earth Lug
M4
M7
M8
M6
M2
②
②
M1
②
M4
①
M3
③
Camera Head
⑨
M26
⑨
⑨
M19
⑨
CN102
CN3
⑥
E101
CN7
CN2, CN4-CN6
M24
M23
④
M36
⑤
⑫
M22
⑤
C1
L1
⑤
FB101
PCB5
PCB4
M20
④
④
PCB3
M21
⑧
⑤
PCB 1
⑤
⑫
⑪
M18
⑪
M14
⑤
PCB2
M35
M33
⑤
⑤
FB102
M17
③
M11
M13
CN101
⑦
⑪
M18
⑪
⑨
M15
⑨
M12
Camera Control Unit
③
⑨
M27
M30
M16
⑩
Serial No.Label
Pakaging
CN110
M41
M42
M43
M51
M45
M51
Camera Control Unit
M50
M50
M51
M44
M46
Camera Head
M51

REPLACEMENT PARTS LIST

Important Notice

1. Components identified by " ⚠ " mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
2. RTL : Retention Time Limited.

MISCELLANEOUS

CAMERA HEAD

REF.NO.	PART NO.	DESCRIPTION	
M1	YWV5GA0148A4	Body Cap	
M2	YWVAKA1165AN	Optical Head Assy	
M3	YWV2TA0326A4	Mounting Base	
M4	YWV5EA1304A3	Cover	
M6	YWV2SA2587A4	Mounting Angle	
M7	YWUS211B06	Washer	
M8	YWUS211B05L	Nut	

CAMERA CONTROL UNIT

REF.NO.	PART NO.	DESCRIPTION	
FB101	YWVRZUS50P3A	Flexible Board A	
FB102	YWVRZUS50P4A	Flexible Board B	
C1	ECQM1H104JZ	Plastic	0.1 µF 50V
L1	YFBL02RN2R62	Coil	2.6 µH
CN2	YWBNCDRD	BNC Connector	
CN3	YWSDEB9S05	D-SUB Connector	
CN4-6	YWBNCDRD	BNC Connector	
CN7	YWTCS7848101	S-VIDEO Connector	
CN101	10A13TR20SB	Camera Connector	
CN102	XLR-4-32F512	Power Connector	
E101	YWHDLNA	D-SUB Connector Holder	
M11	YWV5WA1549B2	Front Panel	
M12	YWV5RA0279B3	Knob	
M13	YWV2KA0858A2	CMain hassis	
M14	YWV2SA2588A3	Mounting Angle	
M15	YWV5EA1306A2	Bottom Cover	
M16	YWV5350WB01	Rubber Foot	
M17	YWV2SA2589A3	Mounting Angle	
M18	YWV2KA0859A2	Chassis	
M19	YWV5EA1305A2	Upper Cover	
M20	YWV2HA1147A2	Shield Parts	
M21	YWV2SA2590A3	Mounting Angle	
M23	YWV5WA1550A2	Rear Panel	
M24	YWV5GB0114A4	Body Cap	
M26	YFV7MA0099A4	Safety Label	
M27	YWV7SA1838A4	Label	
M30	YWV7QA3163A4	Main Label	
M35	YWCC500LB13	Washer	
M36	YWV2HA1179A3	Shield Parts	

MAIN BOARD

REF.NO.	PART NO.	DESCRIPTION	
PCB1 (RTL)	YWVKAUS50E1A	Printed Circuit Board Assy	
IC1,2	YWCXA1439M	IC	
IC3	TC74AC04FSL	IC	
IC4	YWCXA1439M	IC	
IC6	YWTC7S08FUL	IC	
IC7	YWTC7W08FUL	IC	
IC8	TC74AC02FSL	IC	
IC12	YWTC7S66FUL	IC	
IC14	MC74HC4053F	IC	
IC15	NJM319M	IC	
IC16	TC74AC244FSL	IC	
Q1	2SC3931-CD	Transistor	
Q2	2SD1819-QRS	Transistor	
Q3	2SC3931-CD	Transistor	
Q4	2SD1819-QRS	Transistor	
Q5,6	2SC3931-CD	Transistor	
Q7	2SD1819-QRS	Transistor	
Q9	2SC3931-CD	Transistor	
Q10	2SD1819-QRS	Transistor	
Q11-13	2SC3931-CD	Transistor	
Q14	2SD1819-QRS	Transistor	
Q15	2SC3931-CD	Transistor	
Q17	2SD1819-QRS	Transistor	
Q18,19	2SC3931-CD	Transistor	
Q21,22	2SC3931-CD	Transistor	
Q23	2SD1819-QRS	Transistor	
Q24	2SC3931-CD	Transistor	
Q25	2SD1819-QRS	Transistor	
Q26	2SC3931-CD	Transistor	
Q27	2SD1819-QRS	Transistor	
Q28,29	2SC3735	Transistor	
Q30,31	2SA1462	Transistor	
Q32-34	XP4601	Transistor	
Q35	2SD1819-QRS	Transistor	
D1,2	MA110	Diode	
R1	ERJ3GEYJ620	Carbon	62 ohms 1/16W
R2	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R3	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R4	YWR0816P162D	Metal	1.6K ohms 1/16W
R5	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R6	ERJ3GEYJ620	Carbon	62 ohms 1/16W
R7	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R8,9	ERJ3GEYJ621	Carbon	620 ohms 1/16W
R10	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R11	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R12,13	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R14	YWR0816P162D	Metal	1.6K ohms 1/16W
R15	ERJ3GEYJ821	Carbon	820 ohms 1/16W
R16	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R18,19	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R21	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R22	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R23	ERJ3GEYJ620	Carbon	62 ohms 1/16W
R24	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R25	ERJ3GEYJ621	Carbon	620 ohms 1/16W
R27	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R28	ERJ3GEYJ621	Carbon	620 ohms 1/16W
R29	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R30	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R32	ERJ3GEYJ821	Carbon	820 ohms 1/16W
R33	YWR0816P162D	Metal	1.6K ohms 1/16W
R34	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R38	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R39	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R41	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R42	ERJ3GEYJ220	Carbon	22 ohms 1/16W
R45	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R46	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R47	ERJ3GEYJ621	Carbon	620 ohms 1/16W
R48	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R49	ERJ3GEYJ220	Carbon	22 ohms 1/16W
R50	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R52	ERJ3GEYJ471	Carbon	470 ohms 1/16W
R53	ERJ3GEYJ621	Carbon	620 ohms 1/16W
R54,55	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R56	ERJ3GEYJ821	Carbon	820 ohms 1/16W
R62	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R63	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R64	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R65	ERJ3GEYJ220	Carbon	22 ohms 1/16W
R68	ERJ3GEYJ620	Carbon	62 ohms 1/16W
R70	ERJ3GEYJ220	Carbon	22 ohms 1/16W
R71	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R72	ERJ3GEYJ471	Carbon	470 ohms 1/16W
R77	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R80	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R83	ERJ3GEYJ220	Carbon	22 ohms 1/16W
R85	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R87	ERJ3GEYJ220	Carbon	22 ohms 1/16W
R89	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R90	ERJ3GEYJ471	Carbon	470 ohms 1/16W
R97	YWR0816P162D	Metal	1.6K ohms 1/16W
R98	YWR0816P911D	Metal	910 ohms 1/16W
R100	YWR0816P162D	Metal	1.6K ohms 1/16W
R101	YWR0816P911D	Metal	910 ohms 1/16W
R103	YWR0816P162D	Metal	1.6K ohms1/16W
R104	YWR0816P911D	Metal	910 ohms 1/16W
R106	ERJ3GEYJ331	Carbon	330 ohms 1/16W
R107,108	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R109-111	ERJ3GEYJ104	Carbon	100K ohms 1/16W
R112	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R113	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R114	YWR0816P112D	Metal	1.1K ohms 1/16W
R116	YWR0816P152D	Metal	1.5K ohms 1/16W
R117	ERJ3GEYJ182	Carbon	1.8K ohms 1/16W
R118	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R119	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R121	YWR0816P112D	Metal	1.1K ohms 1/16W
R122	YWR0816P152D	Metal	1.5K ohms 1/16W
R123	ERJ3GEYJ182	Carbon	1.8K ohms 1/16W
R124	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R125	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R126	YWR0816P112D	Metal	1.1K ohms 1/16W
R128	YWR0816P152D	Metal	1.5K ohms 1/16W
R129	ERJ3GEYJ182	Carbon	1.8K ohms 1/16W
R130	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R131	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R132	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R133	ERJ3GEYJ330	Carbon	33 ohms 1/16W
R134	ERJ3GEYJ105	Carbon	1M ohms 1/16W
R135	ERJ3GEYJ4R7	Carbon	4.7 ohms 1/16W
R137	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R143-148	ERJ3GEYJ104	Carbon	100K ohms 1/16W
R151	ERJ3GEYJ122	Carbon	1.2K ohms 1/16W
R152	ERJ3GEYJ302	Carbon	3K ohms 1/16W
R153	ERJ3GEYJ122	Carbon	1.2K ohms 1/16W
R154	ERJ3GEYJ302	Carbon	3K ohms 1/16W
R155	ERJ3GEYJ182	Carbon	1.8K ohms 1/16W
R156	ERJ3GEYJ242	Carbon	2.4K ohms 1/16W
R157	ERJ3GEYJ272	Carbon	2.7K ohms 1/16W
R158	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R159	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R160	YWR0816P272D	Metal	2.7K ohms 1/16W
R161	YWR0816P202D	Metal	2K ohms 1/16W
R162	YWR0816P183D	Metal	18K ohms 1/16W
R163	YWR0816P123D	Metal	12K ohms 1/16W
R164	YWR0816P183D	Metal	18K ohms 1/16W
R165-168	YWR0816P472D	Metal	4.7K ohms 1/16W
R169-171	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R172-175	ERJ3GEYJ334	Carbon	330K ohms 1/16W
R177	ERJ3GEYJ330	Carbon	33 ohms 1/16W
R180,181	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R183	ERJ3GEY0R00	Carbon	0 ohms 1/16W
C19-21	ECEV1AG221	Electrolytic	220 µF 10V
C22-24	ECEV1AN330	Electrolytic	33 µF 10V
C25-27	YF400224FZT	Ceramic	0.22 µF
C28	SK21C336MRD0	Electrolytic	33 µF 16V
C29	SK21A476MRD0	Electrolytic	47 µF 10V
C30	SK21C336MRD0	Electrolytic	33 µF 16V
C31	SK31A106MRB	Electrolytic	10 µF 10V
C32	SK21A476MRD0	Electrolytic	47 µF 10V
C33	SK21C336MRD0	Electrolytic	33 µF 16V
C34,35	SK31A106MRB	Electrolytic	10 µF 10V
C36	SK21A476MRD0	Electrolytic	47 µF 10V
C37-40	SK31A106MRB	Electrolytic	10 µF 10V
C42	SK31A106MRB	Electrolytic	10 µF 10V

REF.NO.	PART NO.	DESCRIPTION	
C43	YW5F104Z2VB	Ceramic	0.1 µF
C44	YW5CH100J5VB	Ceramic	10 pF
C45	YW5F104Z2VB	Ceramic	0.1 µF
C50	YW5CH200J5VB	Ceramic	20 pF
C52	YW5CH510J5VB	Ceramic	51 pF
C53	YW5CH151J5VB	Ceramic	150 pF
C55	SK21C336MRD0	Electrolytic	33 µF 16V
C56	SK31A106MRB	Electrolytic	10 µF 10V
C61,63	YW5F104Z2VB	Ceramic	0.1 µF
C64,66	YW5F104Z2VB	Ceramic	0.1 µF
C67,68	SK31A106MRB	Electrolytic	10 µF 10V
C69-73	YW5F104Z2VB	Ceramic	0.1 µF
L2,4	ELJFC8R2MF	Coil	8.2 µH
L6	ELJFC8R2MF	Coil	8.2 µH
L7	ELJFC2R2MF	Coil	2.2 µH
L8-11	ELJFC8R2MF	Coil	8.2 µH
CN1	YW51756394	24-pin Connector	
CN2,4	YW51756390	20-pin Connector	
CN5	YW41756394	14-pin Connector	
CN9	YW522052690	26-pin Connector	
CN10	YW522051290	12-pin Connector	
CN11	YW31756396	6-pin Connector	
CN12	YW41756390	10-pin Connector	
F1	YWSSFC1R2A	Current Fuse	1.2A
TP1	YWRCT2125TPV	Test- Pin	

DRIVE CIRCUIT

REF.NO.	PART NO.	DESCRIPTION	
IC1	MN5197	IC	
IC2	YWUPD16502GS	IC	
IC3	YWTC7S04FUL	IC	
IC4,5	YWTC7S08FUL	IC	
IC6	YWCXD1265R	IC	
IC7	YWTC7W04FUL	IC	
IC8	NJM2904M	IC	
IC9	NJM2902M	IC	
IC11	YWTC7S08FUL	IC	
IC12	YW74HC244DB	IC	
IC13,14	YWTC7S08FUL	IC	
Q1	2SK662-PQR	FET	
Q3	2SD1328-RS	Transistor	
Q5	2SD1820A-QR	Transistor	
Q16	XP4501	Transistor	
Q17,18	2SB970-RS	Transistor	
Q19	2SB1073-QR	Transistor	
Q20	2SB970-RS	Transistor	
Q21	2SB1219A-RS	Transistor	
Q22,25	2SA1532-CD	Transistor	
Q28,29	2SA1532-CD	Transistor	
Q30	2SC3930-BC	Transistor	
Q31	2SB1218-QRS	Transistor	
Q36	2SD1819-QRS	Transistor	
D3-5	MA110	Diode	
D15,16	MA372	Diode	
R1,2	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R3	ERJ3GEYJ333	Carbon	33K ohms 1/16W
R4	ERJ3GEYJ682	Carbon	6.8K ohms 1/16W
R5	ERJ3GEYJ391	Carbon	390 ohms 1/16W
R6	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R8	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R11,13	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R14,17	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R19	ERJ3GEYJ100	Carbon	10 ohms 1/16W
R22,23	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R26,27	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R30	ERJ3GEYJ271	Carbon	270 ohms 1/16W
R33,35	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R36	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R38,39	ERJ3GEYJ100	Carbon	10 ohms 1/16W
R40	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R41	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R42	ERJ3GEYJ100	Carbon	10 ohms 1/16W
R43	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R44	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R48	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R56	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R57	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R58	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R59	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R60	ERJ3GEYJ113	Carbon	11K ohms 1/16W
R62	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R63	ERJ3GEYJ562	Carbon	5.6K ohms 1/16W
R64,67	ERJ3GEYJ330	Carbon	33 ohms 1/16W
R68	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R70,72	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R73	ERJ3GEYJ105	Carbon	1M ohms 1/16W
R74	ERJ3GEYJ151	Carbon	150 ohms 1/16W
R76	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R77	ERJ3GEYJ105	Carbon	1M ohms 1/16W
R78	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R79	ERJ3GEYJ151	Carbon	150 ohms 1/16W
R82	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R83	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R85	ERJ3GEYJ105	Carbon	1M ohms 1/16W
R86	ERJ3GEYJ151	Carbon	150 ohms 1/16W
R87	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R88	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R90	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R93	ERJ3GEYJ202	Carbon	2K ohms 1/16W
R97,98	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R99	ERJ3GEYJ560	Carbon	56 ohms 1/16W
R102	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R104	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R105	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R110	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R111	ERJ3GEYJ560	Carbon	56 ohms 1/16W
R112	ERJ3GEYJ202	Carbon	2K ohms 1/16W
R116	ERJ3GEYJ102	Carbon	1K ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION	
R118,121	ERJ3GEYJ104	Carbon	100K ohms 1/16W
R122,124	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R125	ERJ3GEYJ202	Carbon	2K ohms 1/16W
R127	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R128	ERJ3GEYJ105	Carbon	1M ohms 1/16W
R130	ERJ3GEYJ560	Carbon	56 ohms 1/16W
R131	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R135	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R139	ERJ3GEYJ202	Carbon	2K ohms 1/16W
R141	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R143	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R144	ERJ3GEYJ512	Carbon	5.1K ohms 1/16W
R145	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R146	ERJ3GEYJ512	Carbon	5.1K ohms 1/16W
R147,149	ERJ3GEYJ333	Carbon	33K ohms 1/16W
R155	YWR0816P103D	Metal	10K ohms 1/16W
R156	YWR0816P163D	Metal	16K ohms 1/16W
R157	YWR0816P622D	Metal	6.2K ohms 1/16W
R158	YWR0816P273D	Metal	27K ohms 1/16W
R159	YWR0816P822D	Metal	8.2K ohms 1/16W
R160	YWR0816P133D	Metal	13K ohms 1/16W
R161	YWR0816P682D	Metal	6.8K ohms 1/16W
R162	YWR0816P133D	Metal	13K ohms 1/16W
R163	YWR0816P222D	Metal	2.2K ohms 1/16W
R164	YWR0816P203D	Metal	20K ohms 1/16W
R165	YWR0816P273D	Metal	27K ohms 1/16W
R166	YWR0816P682D	Metal	6.8K ohms 1/16W
R167	YWR0816P123D	Metal	12K ohms 1/16W
R177	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R178	ERJ3GEYJ822	Carbon	8.2K ohms 1/16W
R179,186	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R187	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R188,196	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R200	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R201	ERJ3GEYJ331	Carbon	330 ohms 1/16W
R202	ERJ3GEYJ681	Carbon	680 ohms 1/16W
R203	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R205	ERJ3GEYJ164	Carbon	160K ohms 1/16W
R206	ERJ3GEYJ474	Carbon	470K ohms 1/16W
R214,216	ERJ3GEYJ330	Carbon	33 ohms 1/16W
R219,222	ERJ3GEY0R00	Carbon	0 ohms 1/16W
C1	YW5CH300J5VB	Ceramic	30 pF
C2,3	YW5F104Z2VB	Ceramic	0.1 μF
C5	YW5F104Z2VB	Ceramic	0.1 μF
C6	YW5CH331J5VB	Ceramic	330 pF
C7	YW5CH151J5VB	Ceramic	150 pF
C8	YW5CH331J5VB	Ceramic	330 pF
C9	YW5CH151J5VB	Ceramic	150 pF
C12-14	YW5F104Z2VB	Ceramic	0.1 μF
C17	YW5X102K5VB	Ceramic	1000 pF
C29	YW5X103K2VB	Ceramic	0.01 μF
C31	YW5F104Z2VB	Ceramic	0.1 μF
C32-34	ECEV1HV100SP	Electrolytic	10 μF 50V
C35	SK21C156MRC	Electrolytic	15 μF 16V
C39-41	ECEV1EV4R7	Electrolytic	4.7 μF 25V

REF.NO.	PART NO.	DESCRIPTION	
C42	SK31A106MRB	Electrolytic	10 μF 10V
C43	SK21D106MRC	Electrolytic	10 μF 20V
C44	SK31A106MRB	Electrolytic	10 μF 10V
C45	SK21D106MRC	Electrolytic	10 μF 20V
C46	SK1V685MRD0	Electrolytic	6.8 μF 35V
C47	SK31A106MRB	Electrolytic	10 μF 10V
C48-51	SK21D106MRC	Electrolytic	10 μF 20V
C52	SK31A106MRB	Electrolytic	10 μF 10V
C53	SK21D106MRC	Electrolytic	10 μF 20V
C54	SK1V685MRD0	Electrolytic	6.8 μF 35V
C56	SK21C225MRA	Electrolytic	2.2 μF 16V
C57,58	SK21D106MRC	Electrolytic	10 μF 20V
C61	YW5F104Z2VB	Ceramic	0.1 μF
C62	YW5CH470J5VB	Ceramic	47 pF
C63	YW5CH101J5VB	Ceramic	100 pF
C64	YW5X102K5VB	Ceramic	1000 pF
C65-67	YW5X103K2VB	Ceramic	0.01 μF
C70	YW5X103K2VB	Ceramic	0.01 μF
C72,73	YW5CH101J5VB	Ceramic	100 pF
C76-78	YW5F104Z2VB	Ceramic	0.1 μF
L1-4	ELJFC8R2MF	Coil	8.2 μH
L5	EIC4EJ010E	Coil	1 μH
L6-8	ELJFC8R2MF	Coil	8.2 μH
CF1-3	ELB4B556	Filter	
CN10,11	YW51756434	24-pin Connector	
TP1	YWRCT2125TPV	Test- Pin	
	PROCESS CIRCUIT		
IC101	NJM2904M	IC	
IC103	YWUPC2391GP	IC	
IC104	YWM62366GP	IC	
IC105-107	YWTC7S66FL	IC	
IC108-110	NJM3414M	IC	
IC111	YWM62366GP	IC	
IC112	YWMC14053BF	IC	
IC113-115	YWTC4W53FUL	IC	
IC116	YWTC7S00FUL	IC	
IC117	NJM2904M	IC	
IC118,119	YWTC4W53FUL	IC	
IC301	TC74AC244FSL	IC	
IC303-305	MN655431SH	IC	
IC306	MN6734	IC	
IC308	MN657011H	IC	
IC501,502	YW74HC125PW	IC	
IC503	YWTC4W66FUL	IC	
IC505	YWBR9021BFE1	IC	
IC506	MN13821K	IC	
IC507	YW7702M4L284	IC	
IC508	MN13821K	IC	
IC509	TC74AC32FSL	IC	
IC510	TC74AC245FSL	IC	
IC512	YWTC7S04FUL	IC	
IC514	TC74AC08FSL	IC	

REF.NO.	PART NO.	DESCRIPTION	
IC515	TC74AC04FSL	IC	
IC517	YWTC7S04FUL	IC	
Q101	2SB970-RS	Transistor	
Q102-104	2SC3931-CD	Transistor	
Q105-108	2SD1819-QRS	Transistor	
Q109-117	2SC3931-CD	Transistor	
Q118	XP4601	Transistor	
Q119,120	2SD1819-QRS	Transistor	
Q121-123	XP4601	Transistor	
Q124	XP6534	Transistor	
Q501-503	2SD1819-QRS	Transistor	
Q505	2SC3931-CD	Transistor	
Q506	2SA1532-CD	Transistor	
Q507,509	FA3L4ZT1B	Transistor	
Q510,511	FA3L4ZT1B	Transistor	
D502-507	YWDA221	Diode	
R101	YWR0816P133D	Metal	13K ohms 1/16W
R102	YWR0816P682D	Metal	6.8K ohms 1/16W
R103	ERJ3GEYJ471	Carbon	470 ohms 1/16W
R104	YWR0816P123D	Metal	12K ohms 1/16W
R105	YWR0816P682D	Metal	6.8K ohms 1/16W
R106	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R107,108	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R109	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R110	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R111	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R113,115	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R117	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R118	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R119	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R120	ERJ3GEYJ562	Carbon	5.6K ohms 1/16W
R121	ERJ3GEYJ823	Carbon	82K ohms 1/16W
R122	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R123,124	ERJ3GEYJ682	Carbon	6.8K ohms 1/16W
R125	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R126-128	YWR0816R393D	Metal	39K ohms 1/16W
R129	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R130	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R131-133	YWR0816P183D	Metal	18K ohms 1/16W
R134-136	YWR0816P103D	Metal	10K ohms 1/16W
R137,138	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R139	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R140-142	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R143	ERJ3GEYJ682	Carbon	6.8K ohms 1/16W
R144-146	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R149	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R150	ERJ3GEYJ104	Carbon	100K ohms 1/16W
R151	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R152	ERJ3GEYJ224	Carbon	220K ohms 1/16W
R153	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R154	ERJ3GEYJ224	Carbon	220K ohms 1/16W
R155	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R156	ERJ3GEYJ104	Carbon	100K ohms 1/16W
R157	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R158	ERJ3GEYJ104	Carbon	100K ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION	
R159	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R160	ERJ3GEYJ224	Carbon	220K ohms 1/16W
R161	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R162-166	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R167-169	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R170	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R171	ERJ3GEYJ132	Carbon	1.3K ohms 1/16W
R172	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R173	ERJ3GEYJ122	Carbon	1.2K ohms 1/16W
R174	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R175	ERJ3GEYJ132	Carbon	1.3K ohms 1/16W
R176	ERJ3GEYJ471	Carbon	470 ohms 1/16W
R177	ERJ3GEYJ911	Carbon	910 ohms 1/16W
R178	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R179,180	ERJ3GEYJ680	Carbon	68 ohms 1/16W
R181	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R182	YWR0816R473D	Metal	47K ohms 1/16W
R183	YWR0816P152D	Metal	1.5K ohms 1/16W
R184	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R185	ERJ3GEYJ471	Carbon	470 ohms 1/16W
R186	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R187	ERJ3GEYJ911	Carbon	910 ohms 1/16W
R188,189	ERJ3GEYJ680	Carbon	68 ohms 1/16W
R190	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R191	YWR0816R473D	Metal	47K ohms 1/16W
R192	YWR0816P152D	Metal	1.5K ohms 1/16W
R193	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R194	ERJ3GEYJ471	Carbon	470 ohms 1/16W
R195	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R196,197	ERJ3GEYJ680	Carbon	68 ohms 1/16W
R198	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R199	YWR0816R473D	Metal	47K ohms 1/16W
R200	YWR0816P152D	Metal	1.5K ohms 1/16W
R201	ERJ3GEYJ911	Carbon	910 ohms 1/16W
R202	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R203	ERJ3GEYJ823	Carbon	82K ohms 1/16W
R204	ERJ3GEYJ562	Carbon	5.6K ohms 1/16W
R205	ERJ3GEYJ823	Carbon	82K ohms 1/16W
R206	ERJ3GEYJ562	Carbon	5.6K ohms 1/16W
R207-209	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R210	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R211,212	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R217	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R218	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R219	ERJ3GEYJ224	Carbon	220K ohms 1/16W
R220	ERJ3GEYJ822	Carbon	8.2K ohms 1/16W
R221	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R222	ERJ3GEYJ224	Carbon	220K ohms 1/16W
R223	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R224	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R225	ERJ3GEYJ272	Carbon	2.7K ohms 1/16W
R226	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R227	ERJ3GEYJ272	Carbon	2.7K ohms 1/16W
R228	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R229	ERJ3GEYJ272	Carbon	2.7K ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION	
R230	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R231-233	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R234	YWR0816P102D	Metal	1K ohms 1/16W
R235	YWR0816P113D	Metal	11K ohms 1/16W
R236	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R237	ERJ3GEYJ682	Carbon	6.8K ohms 1/16W
R302,303	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R309	ERJ3GEYJ393	Carbon	39K ohms 1/16W
R310	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R311-319	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R321,323	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R324-339	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R340,341	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R342-344	YWR0816P201D	Metal	200 ohms 1/16W
R345	YWR0816P562D	Metal	5.6K ohms 1/16W
R346	YWR0816P821D	Metal	820 ohms 1/16W
R347	YWR0816P472D	Metal	4.7K ohms 1/16W
R348	ERJ3GEYJ471	Carbon	470 ohms 1/16W
R352,355	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R357	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R501	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R502	ERJ3GEYJ512	Carbon	5.1K ohms 1/16W
R503	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R504	ERJ3GEYJ473	Carbon	47K ohms 1/16W
R511	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R514,515	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R516	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R517	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R518	ERJ3GEYJ912	Carbon	9.1K ohms 1/16W
R519	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R520	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R524-526	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R527	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R528	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R529,530	ERJ3GEYJ203	Carbon	20K ohms 1/16W
R531,532	ERJ3GEYJ512	Carbon	5.1K ohms 1/16W
R536,537	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R539-541	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R544-546	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R547	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R548	ERJ3GEYJ105	Carbon	1M ohms 1/16W
R549	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R550-552	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R553,554	ERJ3GEYJ912	Carbon	9.1K ohms 1/16W
R555	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R556	ERJ3GEYJ271	Carbon	270 ohms 1/16W
R557	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R558	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R559	ERJ3GEYJ203	Carbon	20K ohms 1/16W
R560	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R561	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R562	ERJ3GEYJ203	Carbon	20K ohms 1/16W
R565	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R567,568	ERJ3GEYJ473	Carbon	47K ohms 1/16W
R569-577	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION	
R578-583	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R584-589	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R590-592	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R593-595	ERJ3GEYJ912	Carbon	9.1K ohms 1/16W
R596,597	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R599	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R604-606	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R607	ERJ3GEY0R00	Carbon	0 ohms 1/16W
C101	ECEV1CV100	Electrolytic	10 μF 16V
C102	SK21C156MRC	Electrolytic	15 μF 16V
C104,105	YW5CH121J5VB	Ceramic	120 pF
C110,111	E212BJ224KT	Ceramic	0.22 μF
C112,113	YW5X103K2VB	Ceramic	0.01 μF
C114,115	E212BJ224KT	Ceramic	0.22 μF
C115	YW5X102K5VB	Ceramic	1000 pF
C116	YW5X103K2VB	Ceramic	0.01 μF
C117	E212BJ224KT	Ceramic	0.22 μF
C118	YW5X103K2VB	Ceramic	0.01 μF
C119	E212BJ224KT	Ceramic	0.22 μF
C120,121	YW5F104Z2VB	Ceramic	0.1 μF
C122,123	E212BJ224KT	Ceramic	0.22 μF
C124	SK21A226MRC	Electrolytic	22 μF 10V
C125,126	E212BJ224KT	Ceramic	0.22 μF
C128	YW5F104Z2VB	Ceramic	0.1 μF
C129-131	YW5X103K2VB	Ceramic	0.01 μF
C132	E212BJ224KT	Ceramic	0.22 μF
C133	YW5X103K2VB	Ceramic	0.01 μF
C134-136	SK21A226MRC	Electrolytic	22 μF 10V
C137	E212BJ224KT	Ceramic	0.22 μF
C138	YW5X103K2VB	Ceramic	0.01 μF
C139,140	E212BJ224KT	Ceramic	0.22 μF
C142	SK21A226MRC	Electrolytic	22 μF 10V
C143	YW5X103K2VB	Ceramic	0.01 μF
C144-146	SK21A226MRC	Electrolytic	22 μF 10V
C148,149	E212BJ224KT	Ceramic	0.22 μF
C151	SK21C156MRC	Electrolytic	15 μF 16V
C152	YW5X103K2VB	Ceramic	0.01 μF
C153	SK21A226MRC	Electrolytic	22 μF 10V
C156,157	YW5X102K5VB	Ceramic	1000 pF
C158-160	E212BJ224KT	Ceramic	0.22 μF
C161	ECEV1EV6R8	Electrolytic	6.8 μF 25V
C162,163	ECEV1CV100	Electrolytic	10 μF 16V
C164,171	SK21A226MRC	Electrolytic	22 μF 10V
C180	YW5X103K2VB	Ceramic	0.01μ F
C181	YW5CH221J5VB	Ceramic	220 pF
C182	YW5X103K2VB	Ceramic	0.01 μF
C183,184	YW5F104Z2VB	Ceramic	0.1 μF
C185	ECEV1EN4R7	Electrolytic	4.7 μF 25V
C186	SK21A685MRB	Electrolytic	6.8 μF 10V
C187,188	E212BJ224KT	Ceramic	0.22 μF
C189	ECEV1EN4R7	Electrolytic	4.7 μF 25V
C190	YW5X102K5VB	Ceramic	1000 pF
C191	ECEV1EN4R7	Electrolytic	4.7 μF 25V
C301	SK21A226MRC	Electrolytic	22 μF 10V
C302	SK21C156MRC	Electrolytic	15 μF 16V

REF.NO.	PART NO.	DESCRIPTION	
C303	YW5F104Z2VB	Ceramic	0.1 µF
C308,309	SK31A106MRB	Electrolytic	10 µF 10V
C310	YWSK1C106MRC	Electrolytic	10 µF 16V
C311	SK31A106MRB	Electrolytic	10 µF 10V
C316	YW5F473Z2VB	Ceramic	0.047 µF
C317	YW5CH151J5VB	Ceramic	150 pF
C318,320	YW5F104Z2VB	Ceramic	0.1 µF
C321	YW5F104Z2VB	Ceramic	0.1 µF
C322	SK31A106MRB	Electrolytic	10 µF 10V
C323-327	YW5F104Z2VB	Ceramic	0.1 µF
C328,329	SK31A106MRB	Electrolytic	10 µF 10V
C330-332	YW5F104Z2VB	Ceramic	0.1 µF
C333	SK31C685MRB	Electrolytic	6.8 µF 16V
C334	YW5F104Z2VB	Ceramic	0.1 µF
C335	SK31A106MRB	Electrolytic	10 µF 10V
C501	SK31C685MRB	Electrolytic	6.8 µF 16V
C502	SK31A106MRB	Electrolytic	10 µF 10V
C504-506	YW5F104Z2VB	Ceramic	0.1 µF
C507	SK31A106MRB	Electrolytic	10 µF 10V
C512	YW5CH101J5VB	Ceramic	100 pF
C513	SK31A106MRB	Electrolytic	10 µF 10V
C514-523	YW5F104Z2VB	Ceramic	0.1 µF
C526	YW5F104Z2VB	Ceramic	0.1 µF
C527	SK31A106MRB	Electrolytic	10 µF 10V
C528,529	YW5F104Z2VB	Ceramic	0.1 µF
C531,532	YW5F104Z2VB	Ceramic	0.1 µF
C533	ECEV0JV470S	Electrolytic	47 µF 6.3V
C534,536	YW5F104Z2VB	Ceramic	0.1 µF
L301,303	ELJFC8R2MF	Coil	8.2 µH
L304,306	ELJFC8R2MF	Coil	8.2 µH
L307-309	ELJFC8R2MF	Coil	8.2 µH
L501-503	ELJFC8R2MF	Coil	8.2 µH
X1	CSTCS12MTTC	Crystal Oscillator	
CF101-103	EIK4EW018T	Filter	
CN5	YW31756386	6-pin Connector	
CN6	YW41756380	10-pin Connector	
	ENCORDER CIRCUIT		
IC1	YWMC14066BF	IC	
IC2	MC74HC4053F	IC	
IC3	YWMB88346BEF	IC	
IC4	NJM2904M	IC	
IC5	NJM1496M	IC	
IC6	AN2254FAP	LSI	
IC8	MB90077PF104	IC	
IC9,10	YWTC7S04FUL	IC	
IC11,12	YWTC4W53FL	IC	
IC13	YWMB88346BEF	IC	
Q1-3	2SD1819-QRS	Transistor	
Q4	XP6534	Transistor	
Q5,6	2SC3931-CD	Transistor	
Q7	2SB1218-QRS	Transistor	
Q8	XP6534	Transistor	

REF.NO.	PART NO.	DESCRIPTION	
Q9	2SC3931-CD	Transistor	
Q10,11	2SD1820-QRS	Transistor	
Q12	XP6534	Transistor	
Q13	2SC3931-CD	Transistor	
Q14	2SB1218-QRS	Transistor	
Q15	XP6534	Transistor	
Q16	2SC3931-CD	Transistor	
Q17,18	2SD1820-QRS	Transistor	
Q19	XP6534	Transistor	
Q20	2SC3931-CD	Transistor	
Q21	2SB1218-QRS	Transistor	
Q22	XP6534	Transistor	
Q23	2SC3931-CD	Transistor	
Q24,25	2SD1820-QRS	Transistor	
Q26	XP6534	Transistor	
Q27-29	2SA1532-CD	Transistor	
Q30	2SC3931-CD	Transistor	
Q31,32	2SD1820-QRS	Transistor	
Q33,34	2SC3931-CD	Transistor	
Q35	2SD1819-QRS	Transistor	
Q36	XP6501	Transistor	
Q37	2SD1819-QRS	Transistor	
Q38,39	2SD1820-QRS	Transistor	
Q40	2SA1532-CD	Transistor	
Q41	XP6501	Transistor	
Q42	2SD1819-QRS	Transistor	
Q43,44	2SD1820-QRS	Transistor	
Q45	2SC3931-CD	Transistor	
Q46	XP6501	Transistor	
Q47	2SD1819-QRS	Transistor	
Q48	2SD602-Q	Transistor	
Q49	2SD1820-QRS	Transistor	
Q50,51	XP6401	Transistor	
Q54,55	2SC3931-CD	Transistor	
Q56	2SD1819-QRS	Transistor	
Q57	2SD1820-QRS	Transistor	
Q58	2SD1819-QRS	Transistor	
D1	MA110	Diode	
D3	MA372	Diode	
R1	ERJ3GEYJ680	Carbon	68 ohms 1/16W
R2	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R3	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R4	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R5,6	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R7	ERJ3RHD102S	Metal	1K ohms 1/16W
R8	ERJ3RHD201S	Metal	200 ohms 1/16W
R9	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R10	ERJ3RHD151S	Metal	150 ohms 1/16W
R11	ERJ3GEYJ821	Carbon	820 ohms 1/16W
R12	ERJ3RHD112S	Metal	
R13	YWR0816P562D	Metal	5.6K ohms 1/16W
R14	ERJ3RHD472S	Metal	4.7K ohms 1/16W
R15	ERJ3RHD182S	Metal	1.8K ohms 1/16W
R16	ERJ3RHD332S	Metal	3.3K ohms 1/16W
R17	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION	
R18	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R19	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R20	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R21	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R22	ERJ3GEYJ121	Carbon	120 ohms 1/16W
R23	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R24	ERJ3RHD202S	Metal	2K ohms 1/16W
R25	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R26	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R27	ERJ3GEYJ750	Carbon	75 ohms 1/16W
R28	ERJ3GEYJ122	Carbon	1.2K ohms 1/16W
R29	YWR0816P222D	Metal	2.2K ohms 1/16W
R30	ERJ3GEYJ682	Carbon	6.8K ohms 1/16W
R31	ERJ3GEYJ272	Carbon	2.7K ohms 1/16W
R32	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R33	ERJ3GEYJ680	Carbon	68 ohms 1/16W
R34	ERJ3GEYJ272	Carbon	2.7K ohms 1/16W
R35	ERJ3RHD182S	Metal	1.8K ohms 1/16W
R36	YWR0816P242D	Metal	2.4K ohms 1/16W
R37	YWR0816R393D	Metal	39K ohms 1/16W
R38	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R39	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R40	ERJ3GEYJ681	Carbon	680 ohms 1/16W
R41,42	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R43	YWR0816P682D	Metal	6.8K ohms 1/16W
R44	YWR0816P132D	Metal	1.3K ohms 1/16W
R45	ERJ3RHD222S	Metal	2.2K ohms 1/16W
R46	ERJ3RHD272S	Metal	2.7K ohms 1/16W
R47	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R48	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R49	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R50	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R51	ERJ3GEYJ122	Carbon	1.2K ohms 1/16W
R52,53	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R54	ERJ3RHD202S	Metal	2K ohms 1/16W
R55	YWR0816P222D	Metal	2.2K ohms 1/16W
R56	ERJ3GEYJ682	Carbon	6.8K ohms 1/16W
R57	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R58	ERJ3GEYJ272	Carbon	2.7K ohms 1/16W
R59	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R60	ERJ3GEYJ121	Carbon	120 ohms 1/16W
R61	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R62	ERJ3GEYJ750	Carbon	75 ohms 1/16W
R63-65	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R66	ERJ3GEYJ680	Carbon	68 ohms 1/16W
R67	ERJ3GEYJ272	Carbon	2.7K ohms 1/16W
R68	ERJ3RHD182S	Metal	1.8K ohms 1/16W
R69	ERJ3RHD242S	Metal	2.4K ohms 1/16W
R70	YWR0816R393D	Metal	39K ohms 1/16W
R71	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R72	ERJ3GEYJ681	Carbon	680 ohms 1/16W
R73	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R74	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R75	YWR0816P682D	Metal	6.8K ohms 1/16W
R76	YWR0816P132D	Metal	1.3K ohms 1/16W
R77	ERJ3RHD272S	Metal	2.7K ohms 1/16W
R78	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R79	ERJ3RHD222S	Metal	2.2K ohms 1/16W
R80	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R81	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R82	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R83	ERJ3GEYJ122	Carbon	1.2K ohms 1/16W
R84	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R85,86	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R87	ERJ3RHD202S	Metal	2K ohms 1/16W
R88	YWR0816P222D	Metal	2.2K ohms 1/16W
R89	ERJ3GEYJ682	Carbon	6.8K ohms 1/16W
R90	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R91	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R92	ERJ3GEYJ272	Carbon	2.7K ohms 1/16W
R93	ERJ3GEYJ121	Carbon	120 ohms 1/16W
R94	ERJ3GEYJ750	Carbon	75 ohms 1/16W
R95	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R96,97	ERJ3GEYJ333	Carbon	33K ohms 1/16W
R98	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R99	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R100	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R101	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R102	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R103	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R104	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R105	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R106	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R107	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R108,109	ERJ3GEYJ750	Carbon	75 ohms 1/16W
R110,111	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R112	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R113	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R114	ERJ3GEYJ562	Carbon	5.6K ohms 1/16W
R115	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R116	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R117	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R118	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R119	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R120	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R121	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R122	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R123	ERJ3GEYJ202	Carbon	2K ohms 1/16W
R124	ERJ3GEYJ753	Carbon	75K ohms 1/16W
R125	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R126	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R128	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R129	ERJ3GEYJ512	Carbon	5.1K ohms 1/16W
R130,132	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R134	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R136	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R137	ERJ3GEYJ132	Carbon	1.3K ohms 1/16W
R138	ERJ3GEYJ680	Carbon	68 ohms 1/16W
R139	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R140	ERJ3GEYJ511	Carbon	510 ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION	
R141,142	ERJ3GEYJ680	Carbon	68 ohms 1/16W
R143	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R144	ERJ3GEYJ202	Carbon	2K ohms 1/16W
R145	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R146	ERJ3GEYJ113	Carbon	11K ohms 1/16W
R147	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R148,149	ERJ3GEYJ680	Carbon	68 ohms 1/16W
R150	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R151	ERJ3GEYJ151	Carbon	150 ohms 1/16W
R152	ERJ3GEYJ750	Carbon	75 ohms 1/16W
R153	ERJ3GEYJ242	Carbon	2.4K ohms 1/16W
R154	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R155	ERJ3GEYJ561	Carbon	560 ohms 1/16W
R156	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R157	ERJ3GEYJ560	Carbon	56 ohms 1/16W
R158	ERJ3GEYJ182	Carbon	1.8K ohms 1/16W
R159	ERJ3GEYJ560	Carbon	56 ohms 1/16W
R160	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R161	ERJ3GEYJ512	Carbon	5.1K ohms 1/16W
R162,163	ERJ3GEYJ560	Carbon	56 ohms 1/16W
R164	ERJ3GEYJ271	Carbon	270 ohms 1/16W
R165	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R166	ERJ3GEYJ112	Carbon	1.1K ohms 1/16W
R167	ERJ3GEYJ242	Carbon	2.4K ohms 1/16W
R168	ERJ3GEYJ113	Carbon	11K ohms 1/16W
R169	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R170	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R171	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R172	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R173	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R174	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R175	ERJ3GEYJ182	Carbon	1.8K ohms 1/16W
R177	ERJ3GEYJ334	Carbon	330K 1/16W
R178,179	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R180	ERJ3GEYJ203	Carbon	20K ohms 1/16W
R181	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R182,185	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R186	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R189	ERJ3RHD562S	Metal	5.6K ohms 1/16W
R190	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R191	ERJ3RHD153S	Metal	15K ohms 1/16W
R192	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R193	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R194	ERJ3GEYJ202	Carbon	2K ohms 1/16W
R195	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R196	ERJ3GEYJ680	Carbon	68 ohms 1/16W
R197	ERJ3GEYJ511	Carbon	510 ohms 1/16W
R198	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R199,201	ERJ3GEYJ680	Carbon	68 ohms 1/16W
R202	ERJ3GEYJ242	Carbon	2.4K ohms 1/16W
R203	ERJ3GEYJ162	Carbon	1.6K ohms 1/16W
R204	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R205	ERJ3GEYJ113	Carbon	11K ohms 1/16W
R206	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R207,208	ERJ3GEYJ680	Carbon	68 ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION	
R209	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R210	ERJ3GEYJ750	Carbon	75 ohms 1/16W
R211	ERJ3GEYJ680	Carbon	68 ohms 1/16W
R212,213	ERJ3RHD202S	Metal	2K ohms 1/16W
R214	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R215	ERJ3GEYJ680	Carbon	68 ohms 1/16W
R216	ERJ3GEYJ511	Carbon	510 ohms 1/16W
R217	ERJ3GEYJ362	Carbon	3.6K ohms 1/16W
R218,220	ERJ3GEYJ680	Carbon	68 ohms 1/16W
R221	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R222	ERJ3GEYJ202	Carbon	2K ohms 1/16W
R223	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R224	ERJ3GEYJ113	Carbon	11K ohms 1/16W
R225	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R226-228	ERJ3GEYJ680	Carbon	68 ohms 1/16W
R229	ERJ3GEYJ430	Carbon	43 ohms 1/16W
R230	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R231	ERJ3GEYJ471	Carbon	470 ohms 1/16W
R232	ERJ3GEYJ122	Carbon	1.2K ohms 1/16W
R233	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R234	ERJ3GEYJ680	Carbon	68 ohms 1/16W
R235	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R236	ERJ3GEYJ682	Carbon	6.8K ohms 1/16W
R237	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R238	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R239	ERJ3GEYJ471	Carbon	470 ohms 1/16W
R240	ERJ3GEYJ122	Carbon	1.2K ohms 1/16W
R241	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R242	ERJ3GEYJ680	Carbon	68 ohms 1/16W
R243	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R244,247	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R248	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R250	ERJ3GEYJ392	Carbon	3.9K ohms 1/16W
R251	ERJ3GEYJ750	Carbon	75 ohms 1/16W
R252	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R253	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R254,255	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R256	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R257	ERJ3GEYJ122	Carbon	1.2K ohms 1/16W
R262	ERJ3GEYJ100	Carbon	10 ohms 1/16W
R266	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R267	ERJ3GEYJ302	Carbon	3K ohms 1/16W
R268	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R269	ERJ3GEYJ202	Carbon	2K ohms 1/16W
R270	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R271	ERJ3GEYJ202	Carbon	2K ohms 1/16W
R272	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R273	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R274	ERJ3GEYJ750	Carbon	75 ohms 1/16W
R275	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R276	ERJ3GEYJ270	Carbon	27 ohms 1/6W
R281	ERJ3GEYJ393	Carbon	39K ohms 1/16W
C1	ECEV1AA220	Electrolytic	22 µF 10V
C2	ECEV0JV220	Electrolytic	22 µF 6.3V
C3	YW5CH100J5VB	Ceramic	10 pF

REF.NO.	PART NO.	DESCRIPTION	
C4	YW5CH010C5VB	Ceramic	1 pF
C5	YW5F104Z2VB	Ceramic	0.1 µF
C6	SK21E105MRA	Electrolytic	1 µF 25V
C7	YW5CH100J5VB	Ceramic	10 pF
C8	YW5CH010C5VB	Ceramic	1 pF
C9	YWSK1C106MRC	Electrolytic	10 µF 16V
C10	YW5CH100J5VB	Ceramic	10 pF
C11	YW5F104Z2VB	Ceramic	0.1 µF
C12	YW5CH010C5VB	Ceramic	1 pF
C13	SK31A106MRB	Electrolytic	10 µF 16V
C14	YW5CH100J5VB	Ceramic	10 pF
C15	YW5CH010C5VB	Ceramic	1 pF
C16,17	YWSK1C106MRC	Electrolytic	10 µF 16V
C18	YW5CH100J5VB	Ceramic	10 pF
C19	YW5CH010C5VB	Ceramic	1 pF
C20	YW5F104Z2VB	Ceramic	0.1 µF
C21	YW5CH100J5VB	Ceramic	10 pF
C22	YW5CH010C5VB	Ceramic	1 pF
C23	YWSK1C106MRC	Electrolytic	10 µF 16V
C24	SK21A226MRC	Electrolytic	22 µF 10V
C25	YW5F104Z2VB	Ceramic	0.1 µF
C26	YW5CH101J5VB	Ceramic	100 pF
C27	YW5CH390J5VB	Ceramic	39 pF
C28	YW5CH101J5VB	Ceramic	100 pF
C29	YW5CH391J5VB	Ceramic	39 pF
C30	YW5X681K5VB	Ceramic	680 pF
C31	YW5CH101J5VB	Ceramic	100 pF
C32,33	YW5F104Z2VB	Ceramic	0.1 µF
C35-39	YW5F104Z2VB	Ceramic	0.1 µF
C40	YWSK1C106MRC	Electrolytic	10 µF 16V
C41	ECEV0JV220	Electrolytic	22 µF 6.3V
C42	SK21V684MRA	Electrolytic	0.68 µF 35V
C43,44	YW5X103K2VB	Ceramic	0.01 µF
C45	ECEV1HN010SR	Electrolytic	1 µF 50V
C46-48	YW5F104Z2VB	Ceramic	0.1 µF
C49,50	SK1C226MRD0	Electrolytic	22 µF 16V
C51	YW5CH270J5VB	Ceramic	27 pF
C52-56	YW5F104Z2VB	Ceramic	0.1 µF
C57	YW5CH120J5VB	Ceramic	12 pF
C58	YW5CH040D5VB	Ceramic	4 pF
C59	YW5F104Z2VB	Ceramic	0.1 µF
C61	YW5CH040D5VB	Ceramic	4 pF
C62	ECEV1CV100	Electrolytic	10 µF 16V
C63	YW5CH150J5VB	Ceramic	15 pF
C64	YW5CH050D5VB	Ceramic	5 pF
C65	ECEV1CV100	Electrolytic	10 µF 16V
C66	ECEV1AA220	Electrolytic	22 µF 10V
C67	YW5F104Z2VB	Ceramic	0.1 µF
C68	SK31A106MRB	Electrolytic	10 µF 16V
C69	YW5CH300J5VB	Ceramic	30 pF
C70	YW5F104Z2VB	Ceramic	0.1 µF
C71	YW5CH391J5VB	Ceramic	39 pF
C72	YW5F104Z2VB	Ceramic	0.1 µF
C73	SK31A106MRB	Electrolytic	10 µF 10V
C74	YW5X222K5VB	Ceramic	2200 pF

REF.NO.	PART NO.	DESCRIPTION	
C75-77	ECEV0JA471	Electrolytic	470 µF 6.3V
C78	ECEV1AA330P	Electrolytic	33 µF 10V
C79	YWSK1C106MRC	Electrolytic	10 µF 16V
C80	ECEV0JA471	Electrolytic	470 µF 6.3V
C82	YW5CH470J5VB	Ceramic	47 pF
C84	YW5CH150J5VB	Ceramic	15 pF
L1-5	ELJFC8R2MF	Coil	8.2 µH
L6	ELJSC330KB	Coil	33 µH
L7,8	ELJFC8R2MF	Coil	8.2 µH
CF1	YWNL4532S4R4	Filter	
CF2	ELB4E525	Filter	
CF3	ELB4C551	Filter	
CF4-6	YW2012S14R3T	Filter	
	SYNC CIRCUIT		
IC1	MN73093	IC	
IC2,3	YWTC7S04FUL	IC	
IC4	YWTC7S08FUL	IC	
IC5	YWLM1881M	IC	
IC6	YWTC7SU04FUL	IC	
IC7	MC74HC4050FR	IC	
Q1	2SD1819-QRS	Transistor	
Q2	2SB1218-QRS	Transistor	
Q3-6	2SK662-PQR	FET	
Q7	2SD1819-QRS	Transistor	
Q8	2SB1218-QRS	Transistor	
Q9	XP5601	Transistor	
Q10	XP6501	Transistor	
Q11	XP6435	Transistor	
Q12	2SB1218-QRS	Transistor	
Q13	XP6534	Transistor	
Q14,15	2SC3931-CD	Transistor	
Q16	2SB1218-QRS	Transistor	
D1-6	MA372	Diode	
TH116,135	L311F102G502	Thermistor	
R1,2	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R3	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R7	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R8,9	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R11	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R12,13	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R15	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R16	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R17	ERJ3GEYJ473	Carbon	47K ohms 1/16W
R20	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R21	ERJ3GEYJ822	Carbon	8.2K ohms 1/16W
R22	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R23	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R24	ERJ3GEYJ751	Carbon	750 ohms 1/16W
R25	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION	
R26	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R27	ERJ3GEYJ224	Carbon	220K ohms 1/16W
R28,29	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R30,31	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R32	ERJ3GEYJ105	Carbon	1M ohms 1/16W
R33	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R34,39	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R40	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R42	ERJ3GEYJ822	Carbon	8.2K ohms 1/16W
R43	ERJ3GEYJ471	Carbon	470 ohms 1/16W
R44	ERJ3GEYJ822	Carbon	8.2K ohms 1/16W
R45	ERJ3GEYJ471	Carbon	470 ohms 1/16W
R46,47	ERJ3GEYJ333	Carbon	33K ohms 1/16W
R48	ERJ3GEYJ184	Carbon	180K ohms 1/16W
R49	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R51,52	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R54	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R55	ERJ3GEYJ511	Carbon	510 ohms 1/16W
R56	ERJ3GEYJ334	Carbon	330K ohms 1/16W
R58	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R59	ERJ3GEYJ104	Carbon	100K ohms 1/16W
R60	ERJ3GEYJ823	Carbon	82K ohms 1/16W
R62	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R63	ERJ3GEYJ511	Carbon	510 ohms 1/16W
R64	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R65	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R67	ERJ3GEYJ105	Carbon	1M ohms 1/16W
R68	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R69,70	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R72	ERJ3GEYJ105	Carbon	1M ohms 1/16W
R73	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R74,75	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R76-78	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R79	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R80,81	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R82	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R83	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R84	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R85	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R87,88	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R89	ERJ3GEYJ221	Carbon	220 ohms 1/16W
R90	ERJ3GEYJ471	Carbon	470 ohms 1/16W
R96	ERJ3GEYJ684	Carbon	680K ohms 1/16W
R97	ERJ3GEYJ562	Carbon	5.6K ohms 1/16W
R98	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R99	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R100,101	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R103	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R104,105	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R106	ERJ3GEYJ104	Carbon	100K ohms 1/16W
R108	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R109	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R110	ERJ3GEYJ153	Carbon	15K ohms 1/16W
R111	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R112	ERJ3GEYJ202	Carbon	2K ohms 1/16W
R113	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R115	ERJ3GEYJ681	Carbon	680 ohms 1/16W
R118	ERJ3GEYJ561	Carbon	560 ohms 1/16W
R119	ERJ3GEYJ821	Carbon	820 ohms 1/16W
R120	ERJ3GEYJ560	Carbon	56 ohms 1/16W
R121	YWR0816P182D	Metal	1.8K ohms 1/16W
R122	YWR0816P102D	Metal	1K ohms 1/16W
R123	YWR0816P222D	Metal	2.2K ohms 1/16W
R124	YWR0816P471D	Metal	470 ohms 1/16W
R125	YWR0816P270D	Metal	27 ohms 1/16W
R126	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R127	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R128	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R129	ERJ3GEYJ474	Carbon	470K ohms 1/16W
R130	ERJ3GEYJ105	Carbon	1M ohms 1/16W
R132	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R133,134	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R136,137	ERJ3GEYJ681	Carbon	680 ohms 1/16W
R138	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R139	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R140	ERJ3GEYJ223	Carbon	22K ohms 1/16W
C1-4	YW5F104Z2VB	Ceramic	0.1 μF
C5	YW5CH150J5VB	Ceramic	15 pF
C6	YW5F104Z2VB	Ceramic	0.1 μF
C7	YW5X122K5VB	Ceramic	1200 pF
C8	YW5X393K1VB	Ceramic	0.039 μF
C9,10	YW5CH331J5VB	Ceramic	330 pF
C12	YWSK1C106MRC	Electrolytic	10 μF 16V
C13	YW5CH100J5VB	Ceramic	10 pF
C14	YW5CH150J5VB	Ceramic	15 pF
C15	YWSK1C106MRC	Electrolytic	10 μF 16V
C16	YW5F104Z2VB	Ceramic	0.1 μF
C17	YW5X103K2VB	Ceramic	0.01 μF
C18	YW5CH121J5VB	Ceramic	120 pF
C19	YW5F104Z2VB	Ceramic	0.1 μF
C20	YWSK1C105KRA	Electrolytic	1 μF 16V
C21	YW5F104Z2VB	Ceramic	0.1 μF
C22	SK21C225MRA	Electrolytic	2.2 μF 16V
C23	YW5X103K2VB	Ceramic	0.01 μF
C24	SK31A106MRB	Electrolytic	10 μF 10V
C25	YW5CH101J5VB	Ceramic	100 pF
C26	YW5F104Z2VB	Ceramic	0.1 μF
C27	YW5CH101J5VB	Ceramic	100 pF
C28	YWSK1C106MRC	Electrolytic	10 μF 16V
C29,30	YW5CH331J5VB	Ceramic	330 pF
C31	ECEV1CV100	Electrolytic	10 μF 16V
C32-34	YW5F104Z2VB	Ceramic	0.1 μF
C35	ECEV0JN100S	Electrolytic	10 μF 6.3V
C36-40	YW5F104Z2VB	Ceramic	0.1 μF
C41	ECEV1CV100	Electrolytic	10 μF 16V
C42	YW5F104Z2VB	Ceramic	0.1 μF
C43	ECEV1CV100	Electrolytic	10 μF 16V
C44	YW5F104Z2VB	Ceramic	0.1 μF
C45	ECEV1CV100	Electrolytic	10 μF 16V
C48	YW5CH150J5VB	Ceramic	15 pF

REF.NO.	PART NO.	DESCRIPTION
C49	YW5F104Z2VB	Ceramic 0.1 µF
C50	YW5CH220J5VB	Ceramic 22 pF
C51	SK31A106MRB	Electrolytic 10 µF 10V
C52	YW5F104Z2VB	Ceramic 0.1 µF
L1	ELJFC8R2MF	Coil 8.2 µH
L2	EIC4EJ003E	Coil
L3,4	ELJSC330KB	Coil 33 µH
X1	YWDX17R734	Crystal Oscillator
X2	YWDX14R187	Crystal Oscillator
CF1	YWNL4532S4R4	Filter
TP1-4	YWRCT2125TPV	Test- Pin

FRONT BOARD

REF.NO.	PART NO.	DESCRIPTION
PCB2 (RTL)	YWVKYUS50P1A	Printed Circuit Board Assy
IC1	YWMC74HC541F	IC
IC2	YWTC7S02F	IC
Q1-12	FA3L4ZT1B	Transistor
Q13	2SD1819A-RS	Transistor
D1,2	LN277RPX	LED
R1-4	ERJ3GEYJ103	Carbon 10K ohms 1/16W
R5	ERJ3GEYJ101	Carbon 100 ohms 1/16W
R6-8	ERJ3GEYJ103	Carbon 10K ohms 1/16W
R9	ERJ3GEYJ101	Carbon 100 ohms 1/16W
R10-15	ERJ3GEYJ103	Carbon 10K ohms 1/16W
VR1-3	YWK11K113B20	Variable Resistor 11K ohms
C1	SK21A476MRD0	Tantalum 47 µF 10V
C2	SK31A106MRB	Tantalum 10 µF 10V
L1	ELJFC8R2MF	Coil 8.2 µH
SW1	YWMBP312G	Toggle Switch
SW2,3	YWMBP312C	Toggle Switch
SW4,5	YWMBP312B	Toggle Switch
SW6	YWSDDJA1A1	Seesaw Switch
SW7-10	YWSKQBAC	Push Switch
CN1	YFS6B-PH	6-pin Connector
CN2	YW51746434	24-pin Connector
CN3	YW51746430	20-pin Connector
CN4	YW31746436	6-pin Connector
CN5	YWD0111N200	10-pin Connector
M33	YWA2ND0257A4	LED Spacer

REAR BOARD

REF.NO.	PART NO.	DESCRIPTION
PCB3 (RTL)	YWVKYUS50P2A	Printed Circuit Board Assy
R1,2	ERDS2TJ750	Carbon 75 ohms 1/4W
R5,6	ERDS2TJ750	Carbon 75 ohms 1/4W
C2-5	ECEA0JU471	Electrolytic 470 µF 6.3V
SW1	YWSSS222AN	Slide Switch
CN1	YW51746430	20-pin Connector
CN8	YW41746434	14-pin Connector
CN9	YW1746356	6-pin Connector
J3,4	ERD10T0	Jamper Resistor
J7	ERD10T0	Jamper Resistor

POWER CONNECT BOARD

REF.NO.	PART NO.	DESCRIPTION
PCB4 (RTL)	YWVKYUS50P3A	Printed Circuit Board Assy
CN1	YW51756394	24-pin Connector
CN2	YW51756434	24-pin Connector
CN3	YW51756394	24-pin Connector
CN4	YW51756434	24-pin Connector

POWER BOARD

REF.NO.	PART NO.	DESCRIPTION
PCB5 (RTL)	YWVKZUS50P2A	Printed Circuit Board Assy
IC1	YWBA9702FS	IC
IC2	YWBA9701F	IC
IC3	NJM2904M	IC
IC4	NJM2903M	IC
IC5	NJM3414M	IC
Q1	XN4601	Transistor
Q2	2SD1819-QRS	Transistor
Q3	2SC3931-CD	Transistor
Q4	XN1501	Transistor
Q5	2SD1819-QRS	Transistor
Q6	2SD874A-RS	Transistor
Q7	XN1601	Transistor
Q8	2SA1244Y	Transistor
Q9	2SB1073-QR	Transistor
Q10	2SB1218-QRS	Transistor
Q11	2SD1819-QRS	Transistor
Q12	XN1601	Transistor
Q13	2SA1244Y	Transistor
Q14	2SB1073-QR	Transistor

REF.NO.	PART NO.	DESCRIPTION	
Q15	XN1601	Transistor	
Q16	2SA1244Y	Transistor	
Q17	XP6501	Transistor	
D1	MA110	Diode	
D2	MA8075M	Diode	
D3	MA728	Diode	
D4	MA110	Diode	
D5-7	MA111	Diode	
D8-10	MA736	Diode	
D11	MA122	Diode	
D12	MA123	Diode	
D13	MA141WA	Diode	
D17	MA8075M	Diode	
D18	MA121	Diode	
D19	MA110	Diode	
R1	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R2,3	ERJ3GEYJ473	Carbon	47K ohms 1/16W
R4,5	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R6	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R7	ERJ3GEYJ563	Carbon	56K ohms 1/16W
R8	ERJ3GEYJ104	Carbon	100K ohms 1/16W
R9	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R10	ERJ3GEYJ473	Carbon	47K ohms 1/16W
R11	ERJ3GEYJ223	Carbon	22K ohms 1/16W
R12	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R13	ERJ3GEYJ151	Carbon	150 ohms 1/16W
R14	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R15	ERJ3GEYJ563	Carbon	56K ohms 1/16W
R16	ERJ3GEYJ104	Carbon	100K ohms 1/16W
R17	ERJ3GEYJ563	Carbon	56K ohms 1/16W
R18	ERJ3GEYJ104	Carbon	100K ohms 1/16W
R19	ERJ3GEYF134	Metal	130K ohms 1/16W
R20	ERJ3GEYF184	Metal	180K ohms 1/16W
R21	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R22,23	ERJ3RHD182S	Metal	1.8K ohms 1/16W
R24	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R25	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R26	ERJ3GEYJ151	Carbon	150 ohms 1/16W
R27	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R28	ERJ3GEYJ151	Carbon	150 ohms 1/16W
R29	ERJ3RHD203S	Metal	20K ohms 1/16W
R30	ERJ3RHD473S	Metal	47K ohms 1/16W
R31	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R32	ERJ3GEYJ470	Carbon	47 ohms 1/16W
R33	ERJ3GEYJ332	Carbon	3.3K ohms 1/16W
R34	ERJ3GEYJ472	Carbon	4.7K ohms 1/16W
R35	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R36,37	ERJ3GEYJ112	Carbon	1.1K ohms 1/16W
R38	ERJ3GEYJ104	Carbon	100K ohms 1/16W
R39	ERJ3GEYJ330	Carbon	33 ohms 1/16W
R40	ERJ3GEYG560	Carbon	0 ohms 1/16W
R41	ERJ3GEYJ683	Carbon	68K ohms 1/16W
R42	ERJ3GEYJ512	Carbon	5.1K ohms 1/16W
R43	ERJ3GEYJ302	Carbon	3K ohms 1/16W
R44	ERJ3GEYJ102	Carbon	1K ohms 1/16W

REF.NO.	PART NO.	DESCRIPTION	
R45	ERJ3GEYJ391	Carbon	390 ohms 1/16W
R46	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R47	ERJ3GEYJ183	Carbon	18K ohms 1/16W
R48	ERJ3GEYJ752	Carbon	7.5K ohms 1/16W
R49,50	ERJ3RHD103S	Metal	10K ohms 1/16W
R51	ERJ3GEYJ101	Carbon	100 ohms 1/16W
R52	ERJ3RHD912S	Metal	9.1K ohms 1/16W
R53	ERJ3RHD103S	Metal	10K ohms 1/16W
R54,55	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R56	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R57	ERJ3GEYJ511	Carbon	510 ohms 1/16W
R58	ERJ3GEYJ471	Carbon	470 ohms 1/16W
R59,60	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R61	ERJ3GEYJ243	Carbon	24K ohms 1/16W
R62	ERJ3GEYJ622	Carbon	6.2K ohms 1/16W
R63	ERJ3RHD133S	Metal	13K ohms 1/16W
R64	ERJ3RHD682S	Metal	6.8K ohms 1/16W
R65	ERJ3GEYJ122	Carbon	1.2K ohms 1/16W
R66	ERJ3RHD123S	Metal	12K ohms 1/16W
R67	ERJ3RHD682S	Metal	6.8K ohms 1/16W
R68	ERJ3GEYJ152	Carbon	1.5K ohms 1/16W
R69	ERJ3GEYJ511	Carbon	510 ohms 1/16W
R70	ERJ3GEYJ471	Carbon	470 ohms 1/16W
R71-73	ERJ3GEYJ272	Carbon	2.7K ohms 1/16W
R74	ERJ3GEYJ363	Carbon	36K ohms 1/16W
R75	ERJ3GEYJ512	Carbon	5.1K ohms 1/16W
R76,77	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R78	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R79,86	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R87	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R88	ERJ3GEYJ473	Carbon	47K ohms 1/16W
R89	ERJ3GEYJ104	Carbon	100K ohms 1/16W
R90	ERJ3GEYJ473	Carbon	47K ohms 1/16W
R91	ERJ3GEYJ114	Carbon	110K ohms 1/16W
R92	ERJ3GEYJ154	Carbon	150K ohms 1/16W
R93	ERJ3GEYJ913	Carbon	91K ohms 1/16W
R94	ERJ3GEYJ562	Carbon	5.6K ohms 1/16W
R97	ERJ3GEYJ102	Carbon	1K ohms 1/16W
R98	ERJ3GEYJ222	Carbon	2.2K ohms 1/16W
R105	ERJ3GEYJ112	Carbon	1.1K ohms 1/16W
R107,108	ERJ3GEY0R00	Carbon	0 ohms 1/16W
R140	ERJ3RHD123S	Metal	12K ohms 1/16W
R141	ERJ3GEYF224	Metal	220K ohms 1/16W
R142	ERJ3GEYJ103	Carbon	10K ohms 1/16W
R143	ERJ3GEYF184	Metal	180K ohms 1/16W
R144	ERJ3GEYF224	Metal	220K ohms 1/16W
VR1	YWRH03AVAS3	Variable Resistor	4.7K ohms
VR2	YWRH03AVAJ3	Variable Resistor	2.2K ohms
VR3	YWRH03AVA13	Variable Resistor	1K ohms
VR4	YWRH03AVAJ3	Variable Resistor	2.2K ohms

REF.NO.	PART NO.	DESCRIPTION
C1	YWRSG1V39022	Electrolytic 1 µF 35V
C2	YW5F104Z2VB	Ceramic 0.1 µF
C3	SK21D106MRC	Tantalum 1 µF 20V
C4	SK21D335MRB	Tantalum 3.3 µF 20V
C5	ECA1EFQ270	Electrolytic 27 µF 25V
C6	YW5CH471J5VB	Ceramic 470 pF
C7	YW5X472K5VB	Ceramic 4700 pF
C8-10	YW5F104Z2VB	Ceramic 0.1 µF
C11	SK21C475MRB	Tantalum 4.7 µF 16V
C12	YW5CH331J5VB	Ceramic 330 pF
C13	YW5CH471J5VB	Ceramic 470 pF
C14	YW5X472K5VB	Ceramic 4700 pF
C16	YW5CH471J5VB	Ceramic 470 pF
C17	YW5X472K5VB	Ceramic 4700 pF
C18	YW5F104Z2VB	Ceramic 0.1 µF
C19	YW5X822K5VB	Ceramic 8200 pF
C20	YW5CH471J5VB	Ceramic 470 pF
C22	YW5X222K5VB	Ceramic 2200 pF
C23	YW5X103K2VB	Ceramic 0.01µ F
C24	YW5X102K5VB	Ceramic 1000 pF
C25	YWRSG1A12122	Electrolytic 120 µF 10V
C26	ECA1VFQ180	Electrolytic 18 µF 35V
C27	ECA1EFQ270	Electrolytic 27 µF 25V
C28	ECA1AFQ470	Electrolytic 47 µF
C29	YW5X103K2VB	Ceramic 0.01 µF
C30	YWRSG1E12132	Electrolytic 120 µF 10V
C31	YW5X222K5VB	Ceramic 2200 pF
C32	YWRSG0J15122	Electrolytic 150 µF 6.3V
C33	YW5CH911J2VB	Ceramic 910 pF
C34	YWRSG0J15122	Electrolytic 150 µF 6.3V
C35	YWSK1V225MRC	Tantalum 2.2 µF 35V
C36	ECA0JFQ680	Electrolytic 68 µF 6.3V
C37	YWRSG1E12132	Electrolytic 120 µF 25V
C38	YW5X562K5VB	Ceramic 5600 pF
C39	YWRSG1A27132	Electrolytic 270 µF 10V
C40	YW5CH911J2VB	Ceramic 910 pF
C41	YWRSG0J15122	Electrolytic 150 µF 6.3V
C42	YWSK1V335MRC	Electrolytic 3.3 µF 35V
C43,44	ECA0JFQ680	Electrolytic 68 µF 6.3V
C45	YWRSG1E12132	Electrolytic 120 µF 25V
C46	YW5X562K5VB	Ceramic 5600 pF
C47	YWRSG1A12122	Electrolytic 120 µF 10V
C48	YW5CH911J2VB	Ceramic 910 pF
C49	YWRSG1A12122	Electrolytic 120 µF 10V
C50	YWRSG1V39022	Electrolytic 39 µF 35V
C51	ECA1EFQ270	Electrolytic 27 µF 25V
C52	ECA1CFQ390	Electrolytic 39 µF 16V
C53	YW5F104Z2VB	Ceramic 0.1 µF
C54	YWSK1V225MRC	Electrolytic 2.2 µF 35V
C55,56	YW5F104Z2VB	Ceramic 0.1 µF
C57	SK31A106MRB	Electrolytic 10 µF 10V
C58	YF400224FZT	Ceramic 0.22 µF
C69	SK1E106MRD0	Electrolytic 10 µF 25V
C70,71	YW5X472K5VB	Ceramic 4700 pF
L1	YWS100529220	Coil 22 µH

REF.NO.	PART NO.	DESCRIPTION
L2	ELJFC8R2MF	Coil 8.2 µH
L4	YWPF8470K	Coil 47 µH
L5	YWS100529220	Coil 22 µH
L6	YWPF8470K	Coil 47 µH
L7	YWS100529220	Coil 22 µH
L8	YWPF8101KA	Coil 100 µH
L9	YWS100529220	Coil 22 µH
L10-12	ELJFA101KB	Coil 100 µH
T3	ELL10R035	Flyback Transformer
F1	YWSSFR1R5AF2	Current Fuse 1.5A
CN1,2	YW51756394	24-pin Connector

ACCESSORY PARTS/PACKAGING PARTS

CN110	YWXLB2411	4-pin Connector
M41	YWV8QA3198AN	Operating Instructions
M43	XZB26X40C05	Polyethylene Bag
M44	YWT10X10C03	Polyethylene Bag
M45	XZB35X50C05	Polyethylene Bag
M46	YWV7SA1897A4	Label
M50	YWV9CA2099AN	Packaging Assyfor Camera Head
M51	YWV9CA2151AN	Packaging Assy for Camera Control Unit

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